

# Mesker Industrial Windows



Mesker Bros. Iron Co.  
St. Louis, Mo.

ORLEANS STEEL PRODUCTS CO.  
1019 BIENVILLE ST.  
NEW ORLEANS, LA.

Digitized by:



ASSOCIATION FOR PRESERVATION TECHNOLOGY

[www.apti.org](http://www.apti.org)

For the

BUILDING TECHNOLOGY HERITAGE LIBRARY

<https://archive.org/details/buildingtechnologyheritagelibrary>

From the collection of:



SOUTHEASTERN ARCHITECTURAL ARCHIVE  
SPECIAL COLLECTIONS  
HOWARD-TILTON MEMORIAL LIBRARY

<http://seaa.tulane.edu>



# MESKER

Cruciform Pivoted Sash  
(Heavy Duty)

Cruciform Projected Sash  
(Heavy Duty)

Cruciform Labeled Sash  
(Heavy Duty)

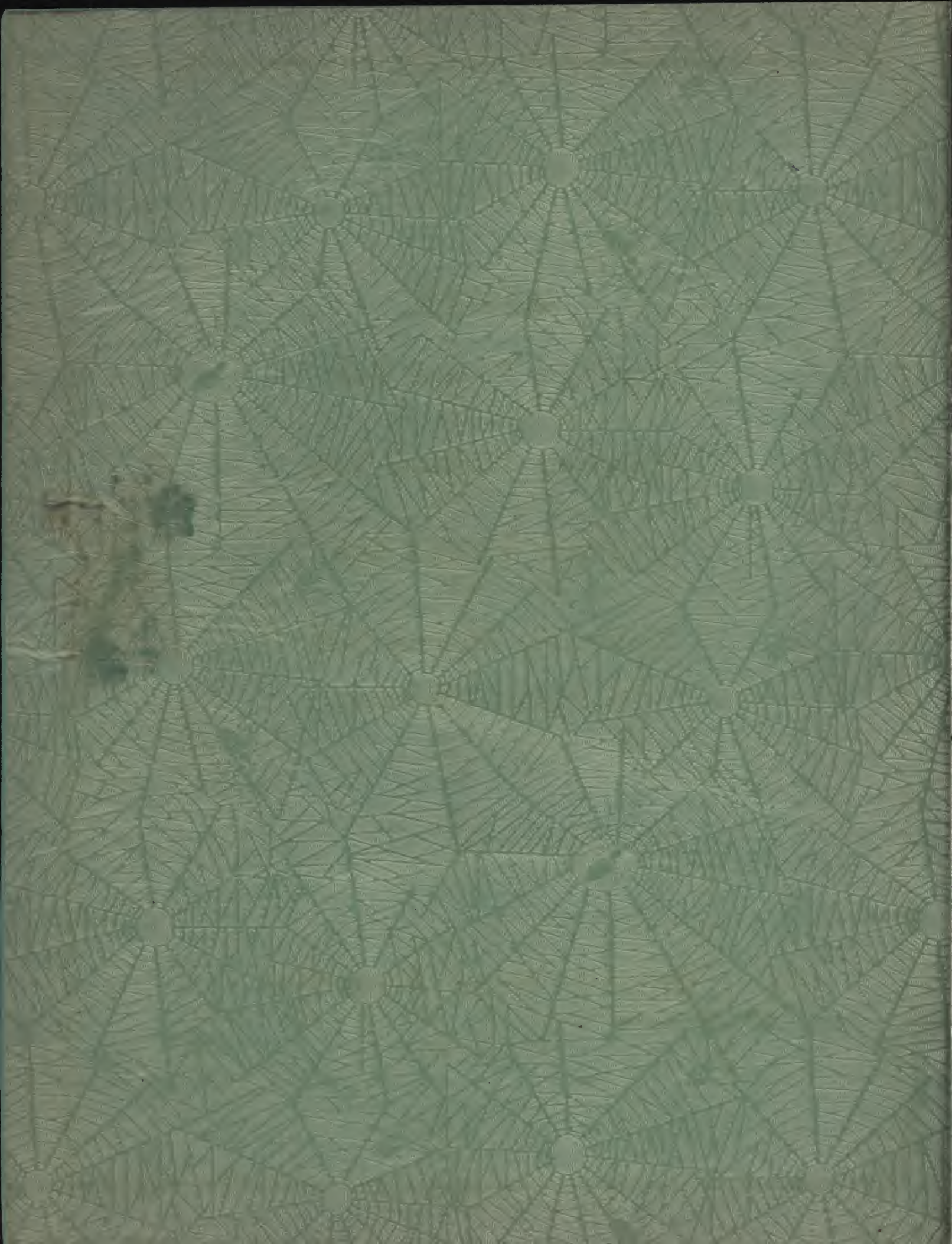
Continuous Monitor Sash  
Mechanical Operators

**Mesker Bros. Iron Co.**

Sixth, Poplar and Seventh Streets      Office: 424 S. Seventh Street  
St. Louis, Mo.

Wrought Iron Sash Originators







# MESKER

**Cruciform Pivoted Sash**

(Heavy Duty)

**Cruciform Projected Sash**

(Heavy Duty)

**Cruciform Labeled Sash**

(Heavy Duty)

**Continuous Monitor Sash**

**Mechanical Operators**

**Mesker Bros. Iron Co.**

Sixth, Poplar and Seventh Streets      Office: 424 S. Seventh Street  
St. Louis, Mo.

Wrought Iron Sash Originators

WROUGHT  
IRON  
SASH  
Mesker

MESKER BROS. IRON CO., ST. LOUIS, MO., Wrought Iron Window Sash Originators

(See page 4)



# TABLE OF CONTENTS

	Page
Introduction .....	4
Full Size Sections .....	5
Horizontally Pivoted Sidewall Sash—	
Specifications .....	6
Features .....	7-8
Hardware .....	9
Construction Details .....	10-11
Commercial Projected Sash—	
Specifications .....	12
Features .....	13
Hardware .....	14
Construction Details .....	15-16
General Information Sidewall Sash .....	17
Standard Sizes Pivoted and Projected Sash .....	18-19-20-21
Mullions .....	22
Installation Details .....	23
Hardware and Miscellaneous Fittings .....	24
Hardware Application .....	25
General Information Continuous Sash .....	26
Full Size Sections .....	27
Top Hung Continuous Sash—	
Specifications .....	28
Features .....	29
Construction Details .....	30
Installation Details .....	31-32
Standard Sizes .....	33
Girt Angle Punching .....	34
Roof Designs .....	35
General Information Mechanical Operators .....	36
Torsion Type Operators—	
Specifications .....	37
Construction Details .....	38
Installation Details .....	39
Capacities .....	48
Rack and Pinion Type Operators—	
Specifications .....	40
Construction Details .....	41
Installation Details .....	41
Motor Driven .....	46-47
Capacities .....	48
Screw Type Operators—	
Specifications .....	42
Construction Details .....	43
Installation Details .....	43
Motor Driven .....	46-47
Capacities .....	48
Tension Type Operators—	
Specifications .....	44
Construction Details .....	45
Installation Details .....	45
Motor Driven .....	46-47
Capacities .....	48



# Mesker Bros. Iron Co.

Established 1879

Saint Louis, Missouri

## EXPERIENCE AND FACILITIES

Mesker Bros. Iron Co. has been in business continuously for over fifty years in the manufacture of high-grade Metal Products, and has specialized in Metal Window Sash for the past thirty years † The factory covers over two and one-half acres of floor area, and is equipped with the most modern machinery, enabling it to take care of the largest orders with ease †

## WROUGHT IRON

It has been our pleasure to originate and develop Solid Section Metal Window Sash made from Genuine Wrought Iron † This material, due to its inherent ability to resist progressive corrosion, coupled with its new improved Heavy Duty construction, has found an immediate acceptance wherever quality products and low maintenance costs are wanted † This metal is made to A. S. T. M. Specification A-84-27 Grade-C from all pig puddled iron, and where required, should be specified as such to eliminate the possibility of less corrosive resistant substitutes † All our Wrought Iron bars have clearly rolled on their surface the distinguishing mark H. W. I. and can thus be readily identified. For further information refer to our literature on Wrought Iron † It tells how to specify to insure getting the genuine †

## DESIGNING SERVICE

This catalogue has been prepared to show all necessary details for standard industrial windows as designated by the U. S. Department of Commerce, and as such cannot cover the multitude of special treatments possible † We maintain an engineering service, however, and are at all times desirous of co-operating in the solution of special window problems † Our Engineering Department is always ready to perform such duties †

## LISTINGS

All Sash should be clearly listed either in schedules or on the plans or in the specifications, in order to insure an accurate estimate † Care should be taken to specify the proper types of both Sash and Hardware required, and all specials should be so noted † Use standard types wherever possible † They afford a wide range of treatment, are more economical and allow for prompt shipment †

## ERECTION

Where preferred, we will erect any or all of our products, and recommend that wherever feasible, this be done, as it centers responsibility, and under normal conditions can be done more economically by the manufacturer † However, specifications and instructions have been prepared to cover this item, and should be closely adhered to †

## GLAZING

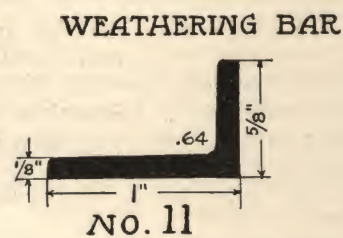
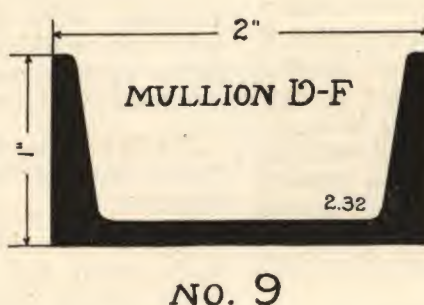
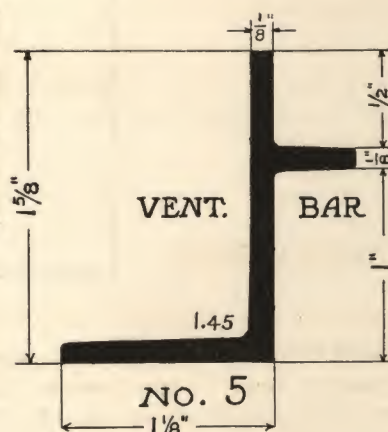
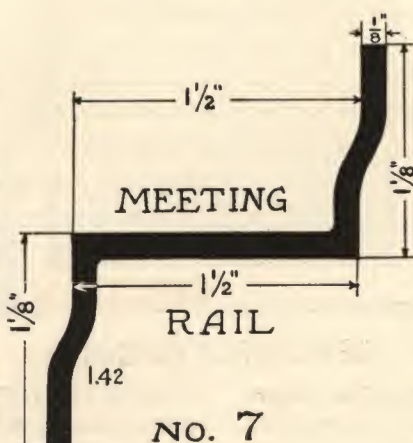
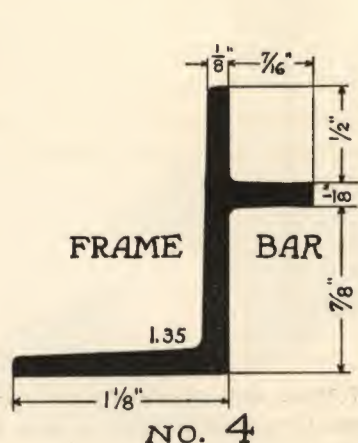
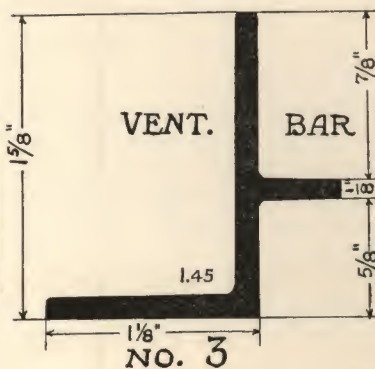
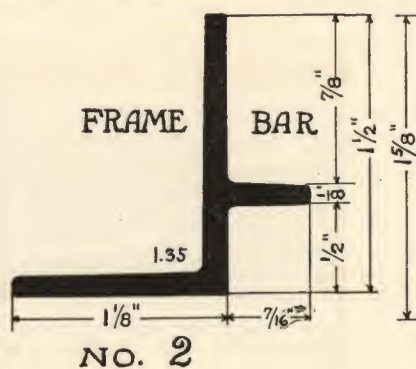
We do not make it a practice to handle glazing contracts, but will do so on request † Special metal sash putty should be used, and care should be taken to see the glass is well bed puttied † Special glazing clips or leads furnished by the manufacturer should always be used †

## PAINTING

Sash are all given one shop coat of paint and should be given a field coat before glazing and a finishing coat, including striping the putty, only after the putty has had sufficient time to set (3 weeks) † The painting contractor should be required to clean the sash of all foreign matter such as plaster, before he begins, to insure a satisfactory paint job as well as easy operation of the sash †



## FULL SIZE SECTIONS



MUNTIN BAR No. 1 is the division bar for all small lights † Its design permits inside, outside, or double glazing, and in conjunction with various combinations of other bars, forms the basic principle of the cruciform sash permitting features not possible with other designs †

FRAME BAR No. 2 is only used around the perimeter of the sash where inside glazing is required †

FRAME BAR No. 4 takes its place when outside glazing is specified †

VENT BARS No. 3 AND No. 5, similar in shape to 2 and 4, are used together to make up the perimeter of all ventilators † They are an eighth of an inch deeper, permitting the ventilator to lap the frame,

forming double contact weathering, and still having the ventilator and field glass lights in the same plane †

MEETING RAIL No. 7 is a specially designed "Z" bar enabling the feature mentioned in the above paragraph to be carried out where one ventilator occurs directly above the other †

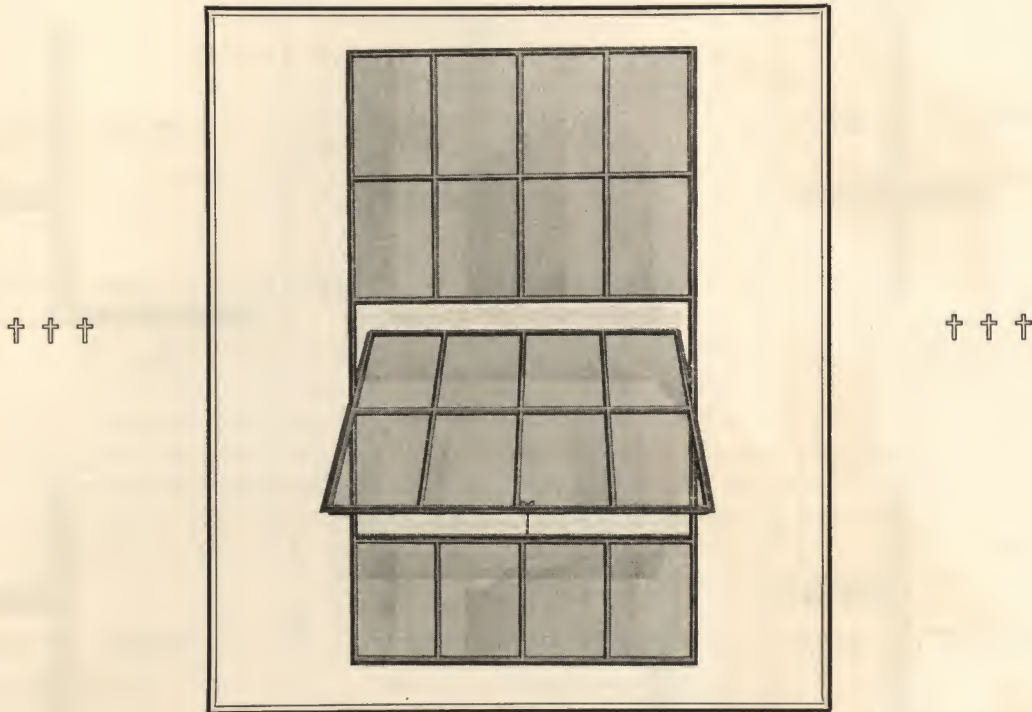
WEATHERING BARS Nos. 10 AND 11 take the place of the common sheet metal weathering so often used † They not only form a more weather-tight contact due to their stiffness, but being of the same weight of material as the other component bars, insure a longer lived installation †

MULLION BAR 9 is one of several standard shapes used for joining two or more sash units † Other shapes are shown to scale under mullion details †



## HORIZONTALLY PIVOTED WINDOWS

### Heavy Duty



### SPECIFICATIONS

**GENERAL**—All window openings unless otherwise specified shall be solid section Cruciform Sash (Heavy Duty) as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**WEATHERING**—Continuous two-point contact around the ventilators shall be provided by means of specially hot rolled angles of at least  $\frac{1}{8}$ " thickness †

**MATERIAL**—The material used shall be low carbon hot rolled billet steel (or Genuine Wrought Iron) in sections not less than  $\frac{1}{8}$ " thick throughout the entire sash and not less than  $1\frac{1}{2}$ " in depth † Ventilator bars shall be  $1\frac{5}{8}$ " deep and the frame bar must provide for  $\frac{3}{8}$ " anchorage in the masonry and still give  $\frac{3}{8}$ " clearance † Glass bearing rabbets shall be at least  $7/16$ " †

**HARDWARE**—All ventilators within easy reach of the floor shall be equipped with both camlock and push bar † All other vents shall be operated by spring latch and chain in approved manner †

**PIVOTS**—All ventilators shall be pivoted 4" above center on Mesker malleable iron and bronze cup pivot, affording extra large bearing surface and being perfectly weathertight †

**CONSTRUCTION**—All sash shall have nominal glass lights of either 12x18 or 14x20 † All joints and intersections shall be solidly welded to insure rigidity † For openings requiring more than one unit, solid rolled section mullions shall be used in accordance with the manufacturer's standard practice † All mullions must be anchored at head and sill † Provide necessary clips, bolts and nuts for attaching sash to steel work where required †

**PAINTING**—All sash shall have one dip coat of rust-resisting mineral paint, grey in color, before shipment †

**GLAZING**—All sash shall be glazed on the inside with special steel sash putty † Provide sufficient spring glazing clips (four per light) † Glass shall be well bed puttied to prevent leakage †

**ERECTION**—Each unit must be set plumb and true in prepared opening and securely cemented or grouted in by masonry contractor † Care must be taken to see that the sash are not sprung by forcing them into improperly made openings † All ventilators should be tested to assure easy operation, and have hardware attached before glazing †

**NOTES**—1 † Sash may be furnished from Genuine Wrought Iron in identical construction (see our literature on wrought iron) †

2 † Outside or double glazing may be had †

3 † Ventilators may be bottom or top pivoted, instead of center pivoted †

4 † All sash may bear the Underwriters' Label † The local fire prevention bureau will be glad to review plans and suggest where labeled sash will be required †

5 † Sash may be hot dipped galvanized after fabrication †

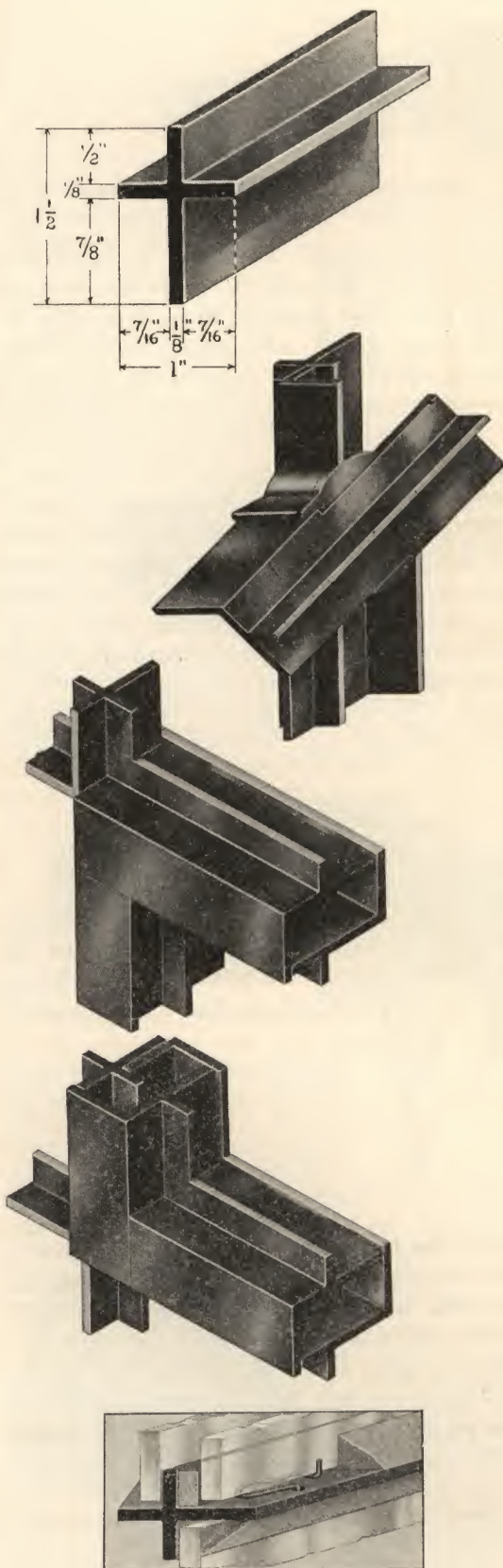
6 † Other combinations of hardware may be had if so specified (see page 25) †

7 † Window cleaning bolts may be attached as shown (see pages 22-23) †

8 † Erection and glazing may be done by sash contractor †



## SALIENT FEATURES



### WEIGHT OF SECTIONS

Mesker sections are the heaviest on the market † The metal has been placed where it will give the greatest rigidity, namely, in the depth of the section † All sections are  $1\frac{1}{2}$ " or  $1\frac{5}{8}$ " deep with a glass bearing leg of  $\frac{7}{16}$ " and a nominal thickness of at least  $\frac{1}{8}$ " † There are no light gauge pressed metal sections used anywhere † Due to the design of the Cruciform Bar, this has been eliminated and all weathering members are  $\frac{1}{8}$ " hot rolled angles † For weights see full size section details, page 5 †

### PIVOT

The cup pivot is characteristic of the care which has been given the design of this Heavy Duty Sash † Its salient points are the unusual perfect weathering it affords, so hard of accomplishment in the pivoted window, the unusual bearing surface, signifying long life and ease of operation, and the neat, clean appearance it offers on both sides † The smaller inside disc is made of bronze, while the larger outside ring is of malleable iron, both almost totally impervious to corrosion, and a combination precluding any possibility of rusting tight †

### WEATHERING

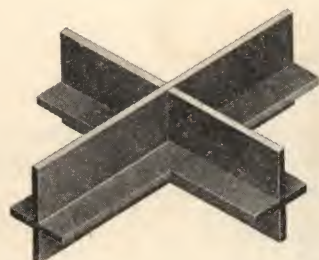
All Mesker Heavy Duty Sash Ventilators have double contact weathering completely around the opening and always in the same plane, which eliminates the poor weathering at ventilator corners so often found in other makes of sash † All weathering members are specially hot rolled angles of equal thickness to the other sections, thus giving a more air tight and a longer lasting installation † All ventilator bars are  $1\frac{5}{8}$ " deep, making a very rigid ventilator, and one which cannot be racked out of shape except under very abusive conditions †

### DOUBLE GLAZING

Muntin, frame and ventilator bars are designed for either inside, outside, or double glazing † Inside glazing is standard, but outside or double may be had if specified † Outside glazing gives a neat finished appearance on the inside without the unnecessary expense of glazing angles, protects the bar from outside corrosion and eliminates the necessity of frequent painting to maintain appearance † Colored putty is recommended to add to the attractiveness of the installation † Double glazing is essential where temperature control is to be considered †



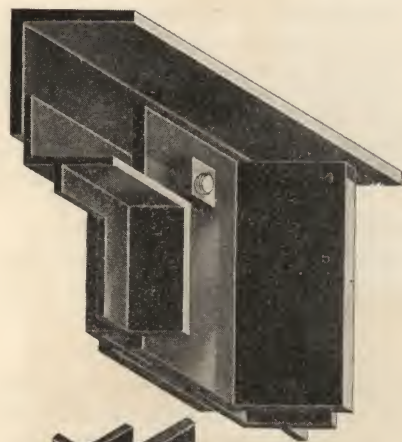
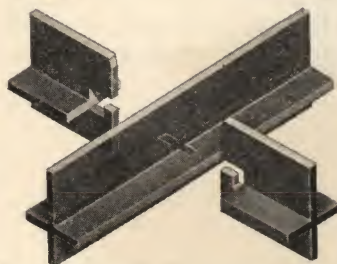
## SALIENT FEATURES



### CONSTRUCTION

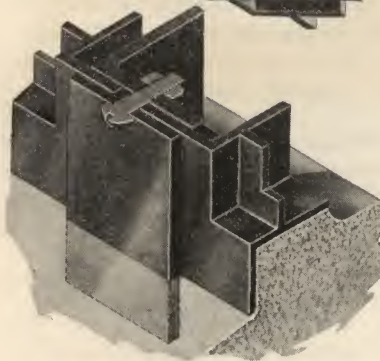
#### MUNTIN JOINT

All joints are both mechanically locked by means of temporary wedges and then securely arc-welded † This forms an intersection both stout and rigid and gives the sash such strength as is impossible of attainment with a mechanical joint only † This feature means better fitting ventilators because the sash will retain the original factory fit and except under the most abusive conditions will not require any field fitting as is so often necessary † The bars are not continuous both ways, and either the horizontal or vertical bars depending on the size and type of sash are run continuously and without any mitres or cut outs to impair their strength † The other bars are butted on and therein is the answer for the great strength of this sash † All joints have a strength greater than the bar itself † This feature also permits the use of the special ventilator bars in the frame, giving a neater appearing window, a sill free from water pockets and a perfect watershed at the head and sill of ventilators †



#### CORNER JOINT

The corner joint is riveted in addition to being welded in two planes, and forms a most solid frame for the window † The projections of the side frame bars are to increase the strength of the joint and to maintain the standard measuring points when the sash are attached to steel work †



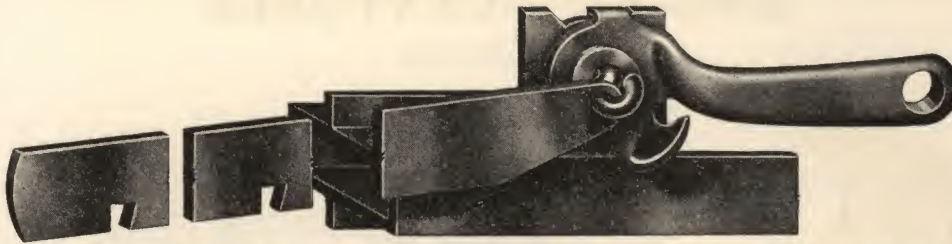
#### MULLION

Mesker's heavy duty mullion has been designed to have the following features of unusual merit: maximum adjustment to meet varying widths; room for expansion and contraction of long runs of sash; anchorage at both head and sill; perfect weathering by overlapping contact at head and sill; unusual strength; better weathering due to the fact that the sash frames are lapped on both sides by the mullion and simplicity in erection † This mullion is more expensive to the manufacturer than the common "T" mullion, which has none of the above superior points †

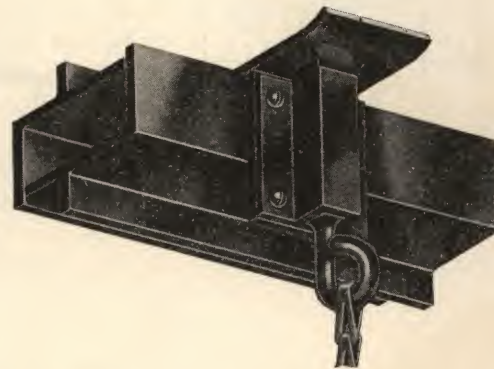
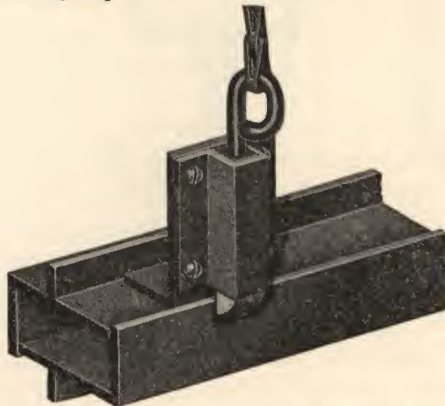




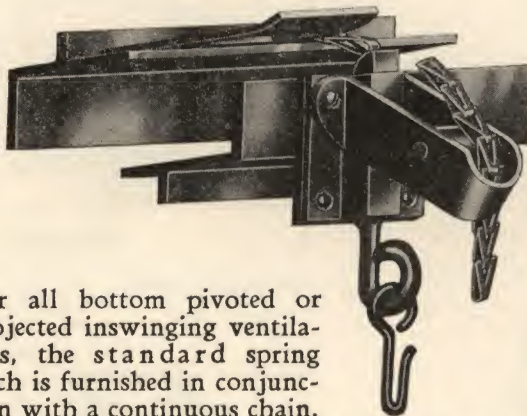
## HARDWARE



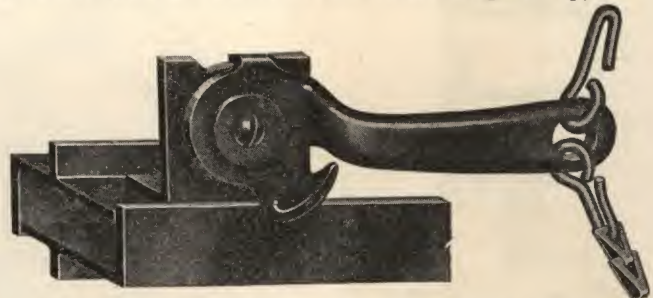
The combination camlock and push bar is standard on all hand-operated pivoted sash † The camlock assures tighter locking not obtainable with a push bar only, and the push bar serves to hold the ventilator open to the desired angle †



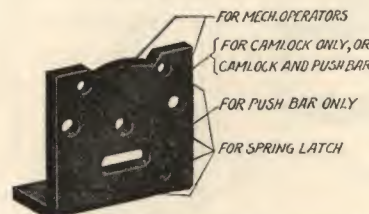
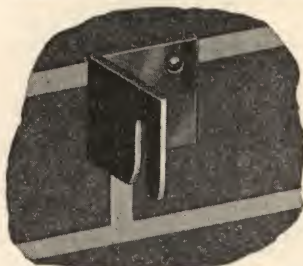
Where ventilators are out of reach, a standard spring latch is furnished at either top or bottom as shown † If the latch is at the bottom, the chain passes over a pulley at the head of the ventilator and down to the operator † With the latch at the head, the chain drops directly to the operator † This style is always used where screens are applied † (See page on hardware application for complete operating details † The two latches are identical in construction, but with different bevels, and are therefore not interchangeable †)



For all bottom pivoted or projected inswinging ventilators, the standard spring latch is furnished in conjunction with a continuous chain, enabling the window to be held in any position and closed at will from below †



This type is a substitute for the spring latch, and requires a continuous chain in order to close the camlock, which is not automatic † While it gives a more positive lock, it is not recommended because of the extra trouble required to operate it, and should only be used where the operation is in careful hands †



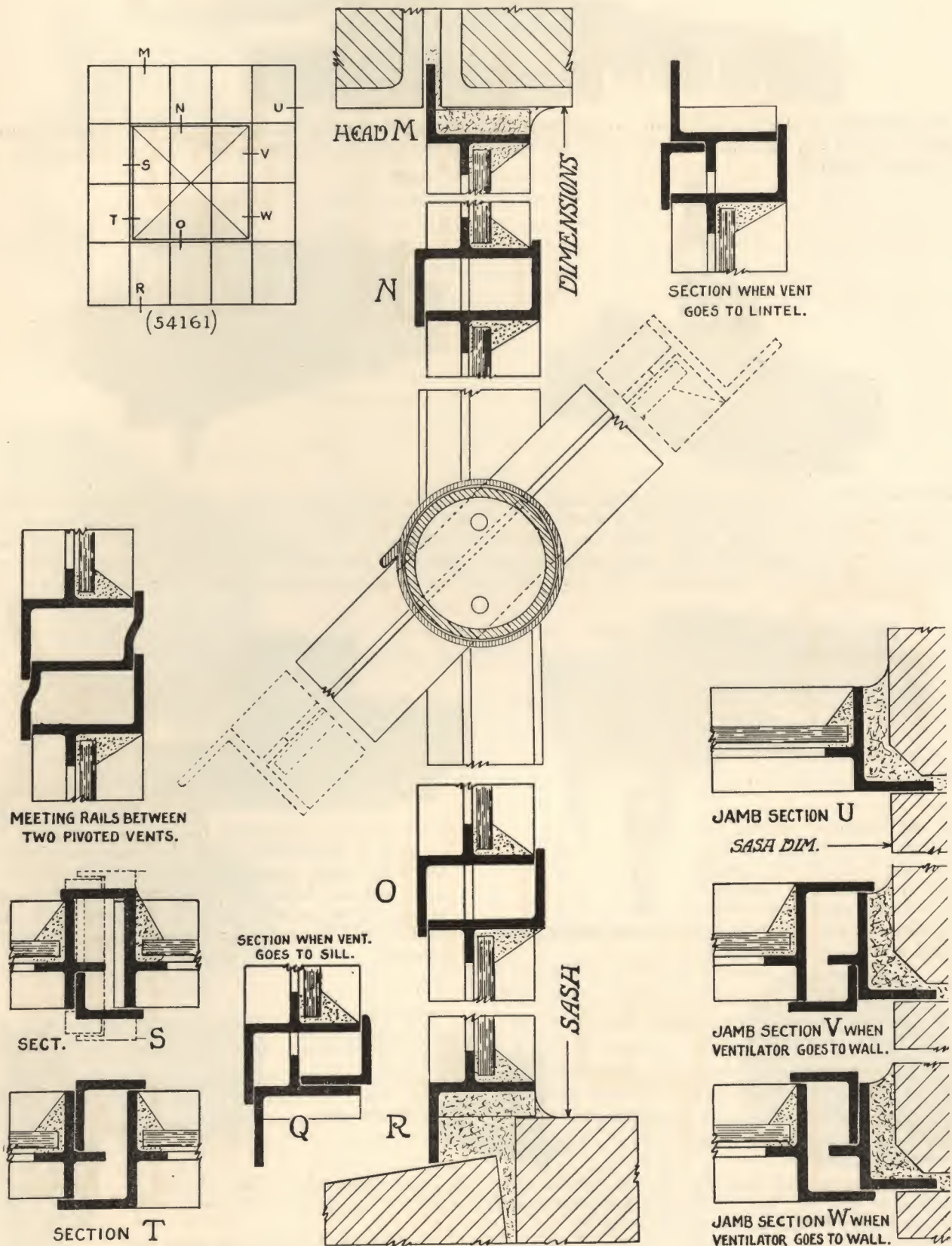
Chain catches are required for all pivoted windows not hand operated † They should be fastened to the sash bar, as shown, wherever possible, and only attached to the wall when the lower part of the sash is out of reach †

The center hole in the lock angle is tapped in order to lock the camlock tightly in place and prevent loosening † All other holes are standard punching, and any type of hardware shown may be attached without drilling, or punching; a feature seldom found in metal sash †



# CONSTRUCTION DETAILS

Inside Glazing

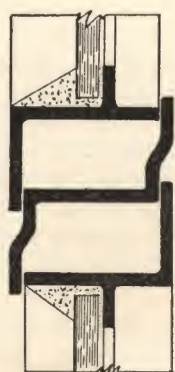
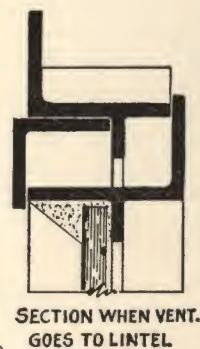
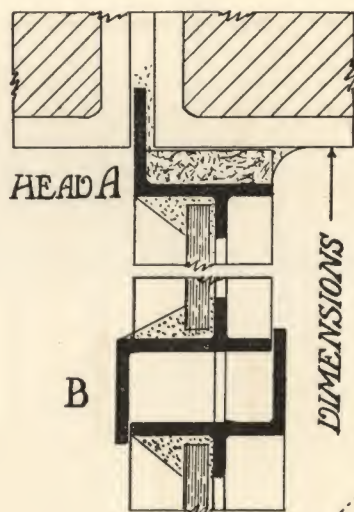
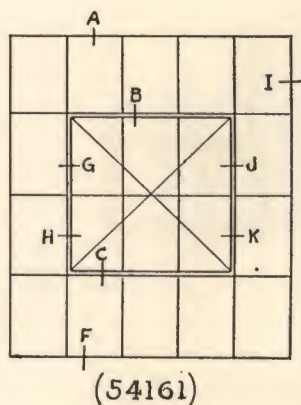


Scale— $\frac{1}{2}$  full size

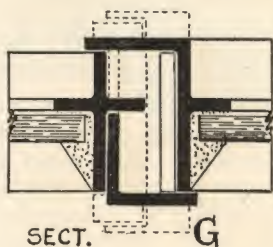


# CONSTRUCTION DETAILS

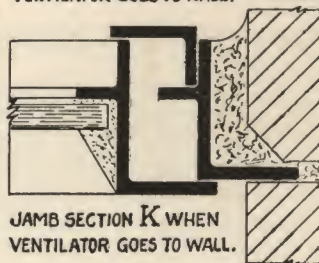
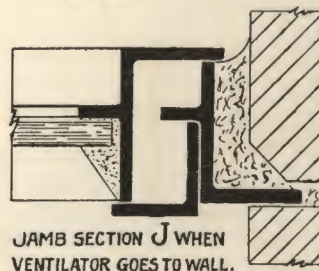
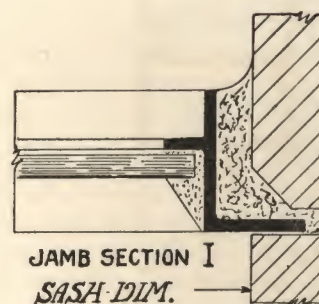
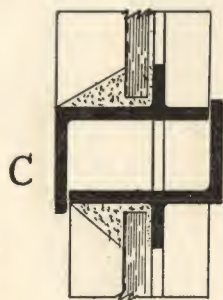
## Outside Glazing



MEETING RAILS BETWEEN  
TWO PIVOTED VENTS.



SECTION WHEN VENT.  
GOES TO SILL.

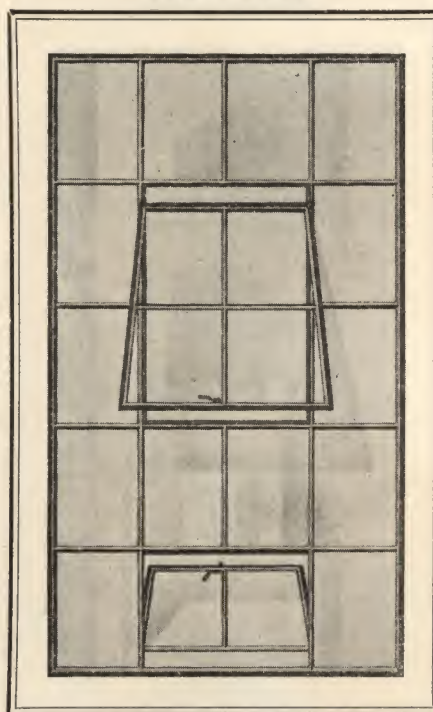


Scale— $\frac{1}{2}$  full size



# COMMERCIAL PROJECTED WINDOWS

Heavy Duty



## SPECIFICATIONS

**GENERAL**—All window openings unless otherwise specified shall be solid section Cruciform Sash (Heavy Duty) as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**WEATHERING**—Continuous two-point contact around the ventilators shall be provided by means of specially hot rolled angles of at least  $\frac{1}{8}$ " thickness †

**MATERIAL**—The material used shall be low carbon hot rolled billet steel (or Genuine Wrought Iron) in sections not less than  $\frac{1}{8}$ " thick throughout the entire sash and not less than  $1\frac{1}{2}$ " in depth † Ventilator bars shall be  $1\frac{5}{8}$ " deep and the frame bar must provide for  $\frac{5}{8}$ " anchorage in the masonry and still give  $\frac{3}{8}$ " clearance † Glass bearing rabbets shall be at least  $\frac{7}{16}$ " †

**HARDWARE**—All ventilators within easy reach of the floor shall be equipped with malleable iron camlock for both projecting in and out types † All projecting ventilators out of reach shall be operated with window pole †

**PIVOTS**—Ventilators shall be balanced on special angle side arms and equipped with bronze ball-bearing friction slides adjustable to meet necessary conditions for holding the ventilator open at any desired angle †

**CONSTRUCTION**—All sash shall have nominal glass lights of either 12x18 or 14x20 † All joints shall be solidly welded to insure rigidity † For openings requiring more than one unit solid rolled section mullions shall be used in accordance with the manufacturer's standard practice † All mullions must be anchored at head and sill † Provide necessary clips, bolts and nut for attaching sash to steel work where required †

**PAINTING**—All sash shall have one dip coat of rust-resisting mineral paint, grey in color, before shipment †

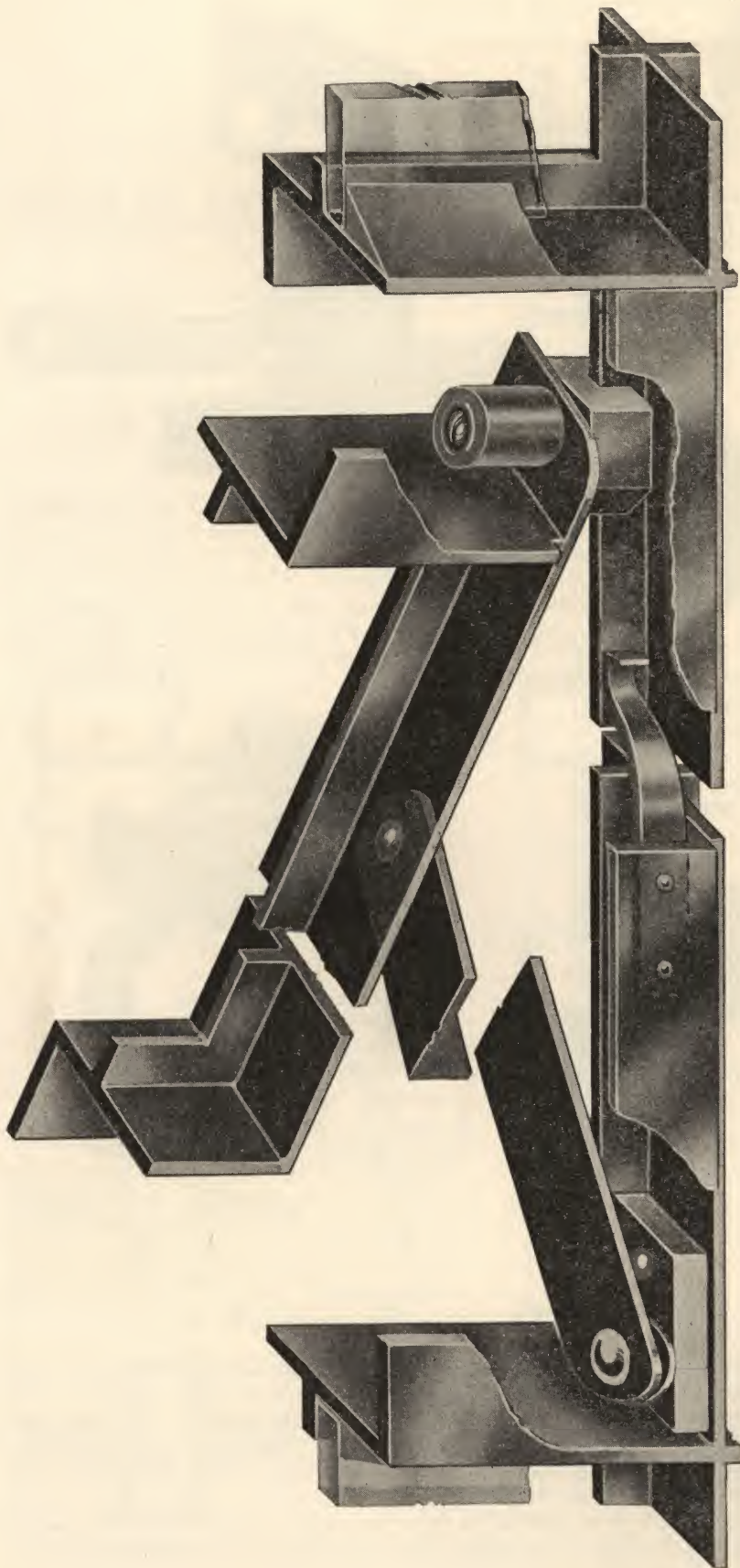
**GLAZING**—All sash shall be glazed on the inside with special steel sash putty † Provide sufficient spring glazing clips (four per light) † Glass shall be well bed puttied to prevent leakage †

**ERECTION**—Each unit must be set plumb and true in prepared openings and securely cemented or grouted in by masonry contractor † Care must be taken to see that the sash are not sprung by forcing them into improperly made openings † All ventilators should be tested to assure easy operation and have hardware attached before glazing †

- NOTES**—1 † Sash may be furnished from Genuine Wrought Iron in identical construction (see our literature on wrought iron) †
- 2 † Outside or double glazing may be had †
- 3 † Projecting out ventilators only may be labeled † The local fire prevention bureau will be glad to review plans and suggest where labeled sash will be required †
- 4 † Sash may be hot dipped galvanized after fabrication †
- 5 † Other combinations of hardware may be had if so specified (see page 25) †
- 6 † Window cleaning bolts may be attached as shown (see pages 22-23) †
- 7 † Bronze hardware may be substituted for malleable iron †
- 8 † Chain operation may be substituted for pole according to hardware application details †
- 9 † Shade brackets may be furnished where required †
- 10 † Erection and glazing may be done by sash contractor †



## SALIENT FEATURES



### WEATHERING

As in Mesker's Pivoted Window, the weathering on the projected type is double contact, and made up of all solid rolled sections † There are no light gauge sections, and since both contacts are continuous around the ventilator, and in the same plane, there are no breaks to cause only single contact at certain points as is found frequently in other makes †

### PIVOTS

The ventilators are supported on special hot rolled angle side arms † A feature not found in any other Sash, and one which gives unusual solidness to its operation and obviates any possibility of bent side arms †

Solid bronze adjustable friction slides complete the mechanism † They slide on the sash members themselves and have no channels to become gummed up with dirt † A ball bearing furnishes the necessary friction to hold the ventilator open at any desirable angle without the use of a stay bar †

However, the friction may be entirely removed and the sash will operate freely † This is desirable where chain operation is required †

This feature gives a very free and easy operation to the ventilator, and still the friction is sufficient to hold it securely at any angle †

### STOPS

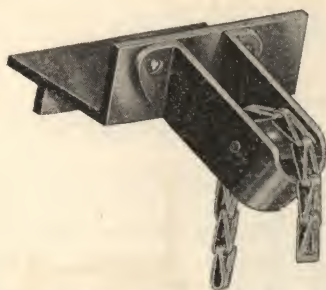
Special spring stops are furnished to prevent the ventilator from being pushed out of reach and also serve to add to the attractiveness of a building by giving a tendency for all the ventilators to be open at the same angle † The stops may be easily sprung back to permit the ventilator to open completely, thus facilitating washing from the inside †

### CONSTRUCTION

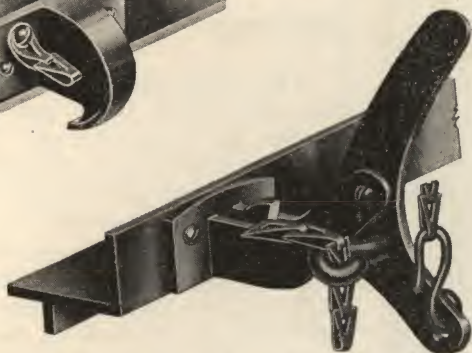
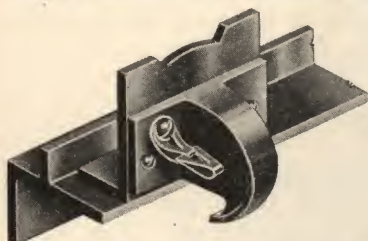
All moving parts are fitted with bronze washers or are bronze themselves † Rivets subjected to wear are all machine driven to insure a uniform bearing surface and a well-formed head † The other features as described under pivoted sash apply equally well here †



## HARDWARE

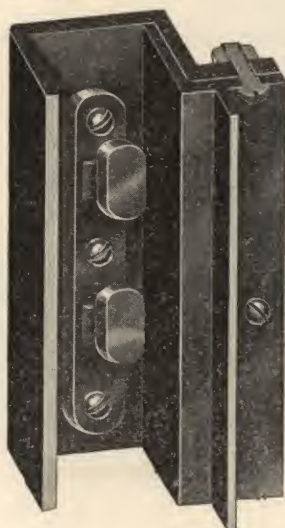
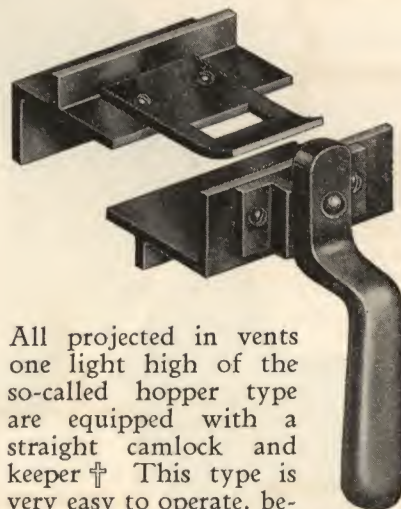


The standard chain roller and guide is used wherever pole operation is objectionable † The pole hook shown opposite is furnished as standard equipment † All hardware shown may be either steel and malleable iron as standard, or bronze throughout as an extra †



Where pole operation is not desired, the automatic lock is furnished † Its construction is such that it gives the ventilator a start from dead center due to its cam action and is combined with a lock as well † This arrangement gives the only satisfactory means of operating a projected ventilator by means of chain †

The standard camlock is furnished for hand operation, and is equipped with a large hole in the end of the handle for pole operation in conjunction with the pole hook above † This type of hardware is the most satisfactory, due to its simple operation, and should be used wherever possible † The bronze strike plate shown is standard only with bronze hardware †



All projected in vents one light high of the so-called hopper type are equipped with a straight camlock and keeper † This type is very easy to operate, being of ample size to give a good grip and having a cam action to close the ventilator tightly † For chain or pole operation on larger projected in vents out of reach, the same style as shown for bottom pivoted swing in ventilators will be used (see page 9) †

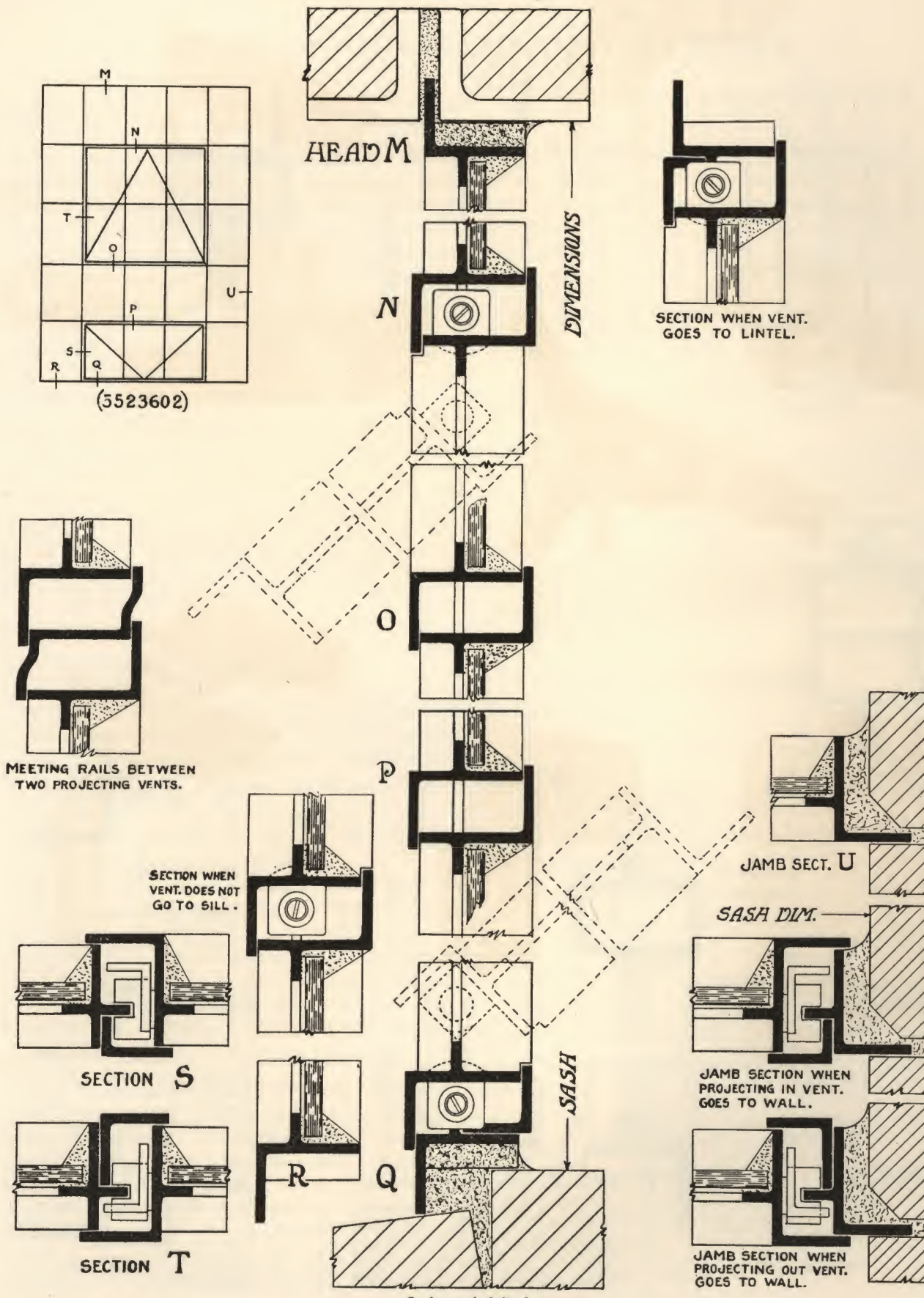
To minimize accidents, holdfasts used for attaching window cleaner safety belts are recommended, and where required, will be furnished as shown when specified † The sash are punched specially to receive this attachment, which is so designed as not to interfere with the operation of the ventilator † Another type shown under installation details is furnished at the manufacturer's discretion, where it will not interfere with the ventilator † Mullions and sash both must be specially punched in order to attach either type bolt, and therefore cleaner bolts should be specified at the time of ordering †

Shade brackets are only furnished as an extra, and same should be noted on order, as standard sash are not punched to receive them † They facilitate the problem of shading, but are ordinarily furnished under another contract †



# CONSTRUCTION DETAILS

Inside Glazing

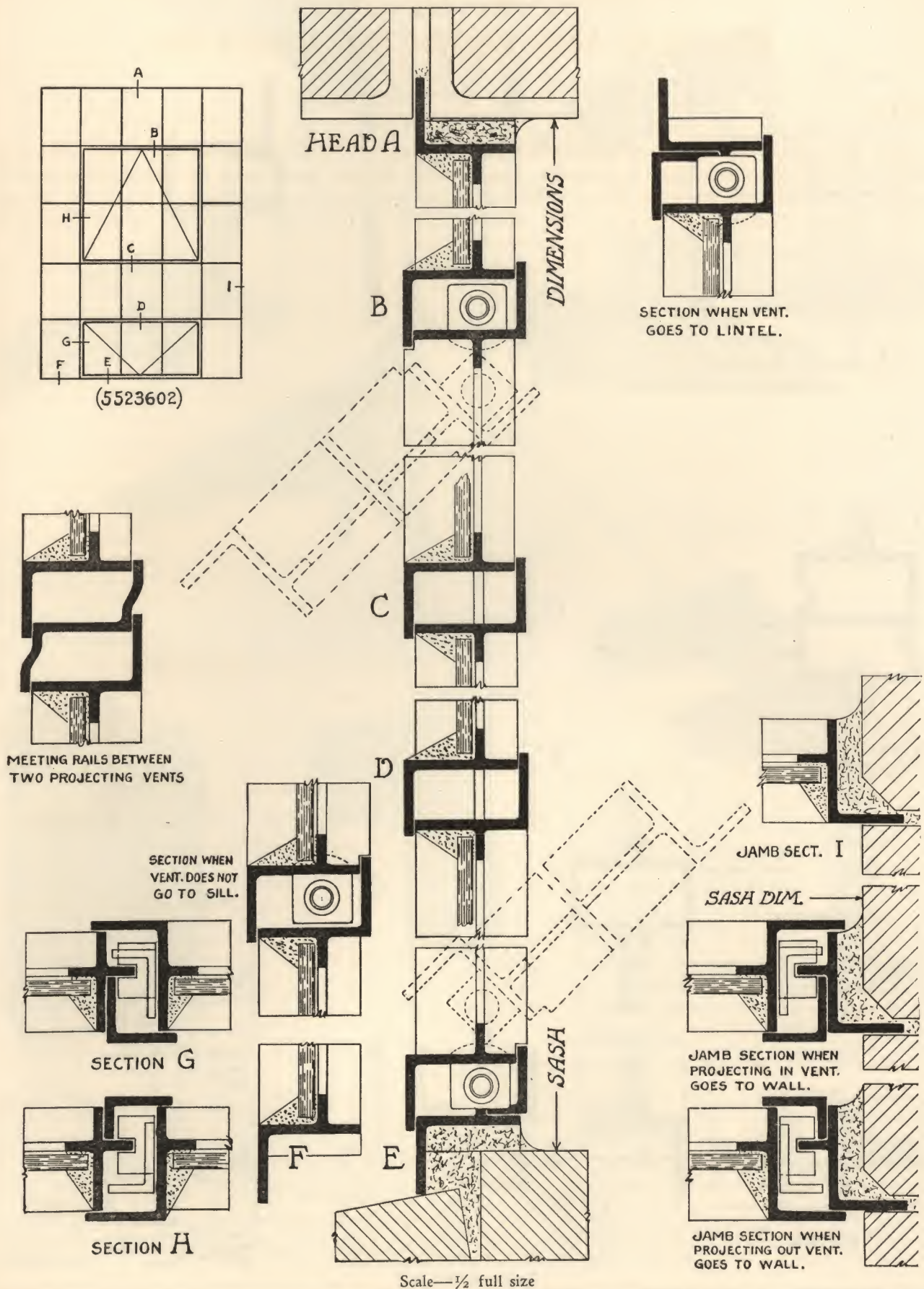


Scale— $\frac{1}{2}$  full size



# CONSTRUCTION DETAILS

## Outside Glazing





## GENERAL INFORMATION

### PIVOTED AND PROJECTED WINDOWS

#### SIZES

Stock sizes are shown as shaded units, others are considered standard, except those classified as listed specials † All use standard sized glass † Delivery depends on the types required and for that reason stock sizes are the most desirable, also being the most economical † The code numbers have the following meaning: The first number is the number of lights wide, second is the number of lights high, third is the number of ventilators, fourth is the number of lights in the ventilator and fifth is the number of lights the ventilator is from the sill † They should be used for simplicity and suffixed with glass size † All special glass sizes require special opening sizes and vice versa † Single units may be combined with mullions to fit any openings † The table on the next page gives a list of standard symmetrical openings and shows how special sizes can be arrived at † The size of a sash is given as the clear opening size and does not include the 1 ¼" of the walling in flanges †

#### UNDERWRITERS' WINDOWS

All standard pivoted windows may bear the underwriters' fire label where required for insurance purposes † General label requirements are as follows:

Units shall not be larger than 7'x12' †

Vents shall not be larger than 5'x4' †

The exposed glass area in any one light shall not be more than 350 sq. inches †

Hardware must conform with the rulings of the local board † Spring latch and fusible links are always acceptable †

Projected in or pivoted in vents cannot be used †

Standard mullions pass the underwriters' inspection and may be used to fill any size opening †

All glass must be held in with steel glazing angles and must be glazed with ¼" wire glass †

If the above requirements are adhered to, Mesker's standard sash may be made to conform to the underwriters' requirements in the field by the attachment of the required fittings and after a field inspection † All sash are punched as standard to accommodate the change with very little more erection expense than were they originally ordered labeled † The cost of the extra material such as glazing angles, fusible links, chain, hardware, etc., is the only extra expense

necessary † This procedure is not recommended due to the expense involved in a field inspection and is only mentioned as an alternate procedure † Where possible, always order labeled sash where required † The local fire prevention bureau will be glad to review plans and suggest where labeled sash will be required † Should they not be available, we shall be glad to furnish names of the nearest bureau where this information is available †

#### HARDWARE

The illustrations on page 25 show all possible hardware combinations which can be applied as standard † Unless otherwise specified, applications 1, 6, 8, 10 are furnished and are recommended as being the most serviceable † All parts shown are either steel or malleable iron, but may be had in bronze if so specified † They are always shipped unattached to prevent damage during erection †

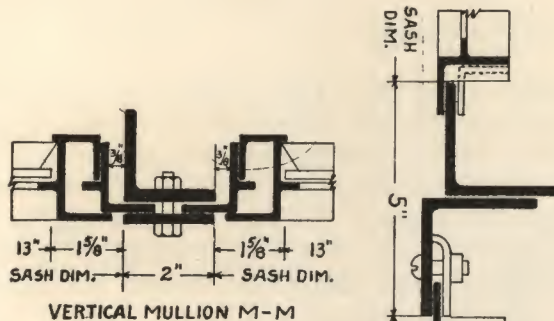
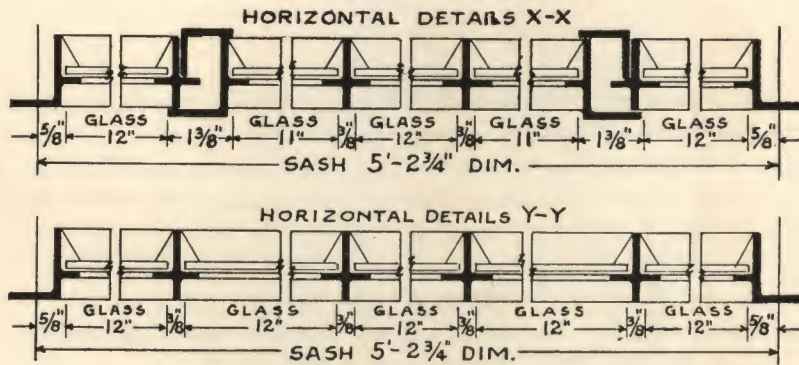
#### INFORMATION REQUIRED WITH ORDER

- 1 † Number of openings and sizes † (Give width first †)
- 2 † Inside or outside glazing †
- 3 † Combination of standard units required per opening † (See page 18 †)
- 4 † Should ventilators open in or out †
- 5 † Ventilator hardware required † (See page 25 †)
- 6 † Height from floor to sill of window †
- 7 † Construction of opening † Head, sill, jambs † (See details shown on page 23 †)
- 8 † Are mullion covers required? (See page 22 †)
- 9 † Are we to furnish glass and putty? (If so, state kind of glass and color of putty †)
- 10 † Billing address †
- 11 † Consignee and shipping address †
- 12 † Routing †
- 13 † Shipping date desired †



## STANDARD SIZES—Pivoted and Projected

## GLASS SIZES

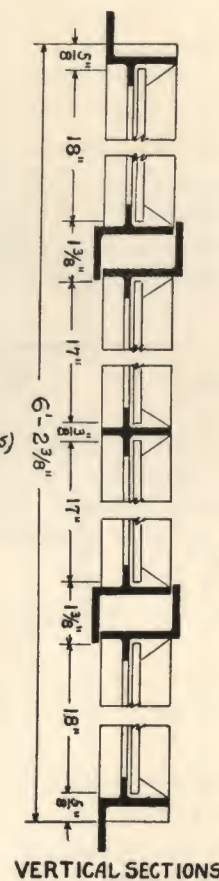
HORIZONTAL MULLION  
(SEE MULLION PAGE FOR OTHER SIZES)

12	12	12	12	12
18	18	18	18	18
12	11	12	11	12
18	17	17	17	18
12	11	12	11	12
18	17	17	17	18
12	12	12	12	12
18	18	18	18	18

(54161)

14	14	14	14
20	20	20	20
13	14	14	13
19	19	19	19
13	14	14	13
19	19	19	19
14	14	14	14
20	20	20	20

(44181)



## OPENING SIZES

STANDARD HEIGHTS			
HEIGHTS OF OPENINGS			
LTS. HIGH	12"x18" GLASS	LTS. HIGH	14"x20" GLASS
1	1' 7 1/4"	1	1' 9 1/4"
2	3' 1 5/8"	2	3' 5 5/8"
3	4' 8"	3	5' 2"
4	6' 2 3/8"	4	6' 10 3/8"
5	7' 8 3/4"	5	8' 6 3/4"
6	9' 3 1/8"	6	10' 3 1/8"
7	10' 9 1/2"	7	11' 11 1/2"

SYMMETRICAL STANDARD WIDTHS			
OPENING DIMENSIONS 12"x18" GLASS	LTS. WIDE IN OPNG	LIGHTS WIDE IN EACH UNIT	OPENING DIMENSIONS 12"x18" GLASS
2-1 5/8"	2	2	2-5 5/8"
3-2"	3	3	3-8"
4-2 3/8"	4	4	4-10 3/8"
4-5 1/4"	4	2 2	5-1 1/4"
5-2 3/4"	5	5	6-0 3/4"
6-3 3/8"	6	6	7-3 3/8"
6-6"	6	3 3	7-6"
7-6 3/8"	7	4 3	8-8 3/8"
8-6 3/4"	8	4 4	9-10 3/4"
9-10"	9	3 3 3	11-4"
10-7 1/2"	10	5 5	12-3 1/2"
10-10 3/8"	10	3 4 3	12-6 3/8"
11-10 3/4"	11	2 5 3	13-8 3/4"
11-10 1/4"	11	4 3 4	13-8 3/4"
12-8 1/4"	12	6 6	14-8 1/4"
12-11 1/8"	12	4 4 4	14-11 1/8"
13-2"	12	3 3 3 3	15-2"
13-11 1/2"	13	4 5 4	16-1 1/2"
13-11 1/2"	13	5 3 5	16-1 1/2"
14-11 1/8"	14	4 6 4	17-3 7/8"
14-11 1/8"	14	5 4 5	17-3 7/8"
15-2 3/4"	14	3 4 4 3	17-6 3/4"
16-0 1/4"	15	5 5 5	18-6 1/4"
16-0 1/4"	15	6 3 6	18-6 1/4"
16-6"	15	3 3 3 3 3	19-0"
17-0 5/8"	16	5 6 5	19-8 5/8"
17-0 5/8"	16	6 4 6	19-8 5/8"
17-3 1/2"	16	4 4 4 4	19-11 1/2"
17-3 1/2"	16	3 5 5 3	19-11 1/2"
17-6 3/8"	16	3 3 4 3 3	20-2 3/8"
18-1"	17	6 5 6	20-11"
18-6 3/4"	17	3 4 3 4 3	21-4 3/4"
19-1 3/8"	18	6 6 6	22-1 3/8"
19-4 1/4"	18	3 6 6 3	22-4 1/4"
19-4 1/4"	18	4 5 5 4	22-4 1/4"
19-7 1/8"	18	3 4 4 4 3	22-7 1/8"
20-7 1/2"	19	3 5 3 5 3	23-9 1/2"
21-5"	20	5 5 5 5	24-9"
21-5"	20	4 6 6 4	24-9"
21-7 7/8"	20	4 4 4 4 4	24-11 7/8"
21-10 3/4"	20	3 3 4 4 3 3	25-2 3/4"

ALL GLASS SIZES ARE 12"x18" OR 14"x20"  
VENTILATOR CORNER LIGHTS ARE ONE INCH  
SHORTER IN BOTH WIDTH AND HEIGHT.  
VENTILATOR CENTER LIGHTS ARE 12" OR 14"  
WIDE AND 17" OR 19" HIGH.  
CIRCLE AND CAMBER LIGHTS CUT TO  
TEMPLATE.  
DO NOT CONFUSE THE GLASS SIZES BY  
USING 12"x20" OR 14"x18" IN ANY SASH.

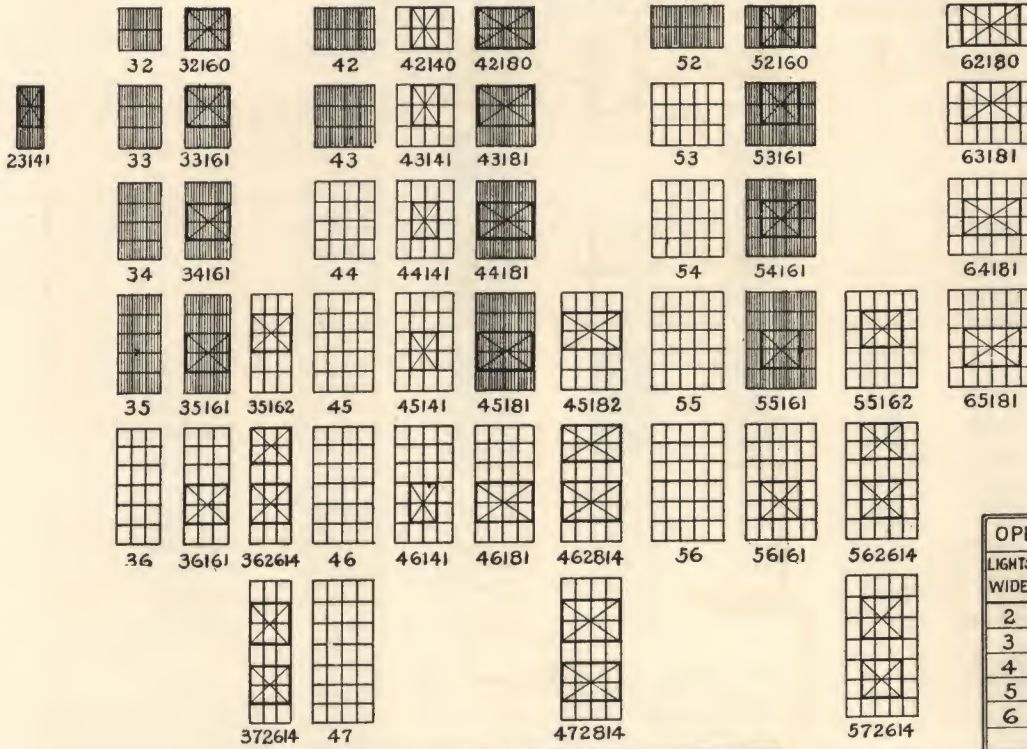
THE ABOVE TABLES ARE FOR  
STANDARD SIZE UNITS ONLY.  
TO FIND THE WIDTHS OF MULTIPLE  
UNIT OPENINGS SEE ABOVE TABLE  
OR ADD SASH DIMENSIONS PLUS  
2" FOR EACH MULLION USED.  
FOR HEIGHTS ADD SASH DIMENSIONS  
TOGETHER AND SEE HORIZONTAL  
MULLION TABLE FOR AMOUNT TO ADD.



# STANDARD SIZES

Pivoted

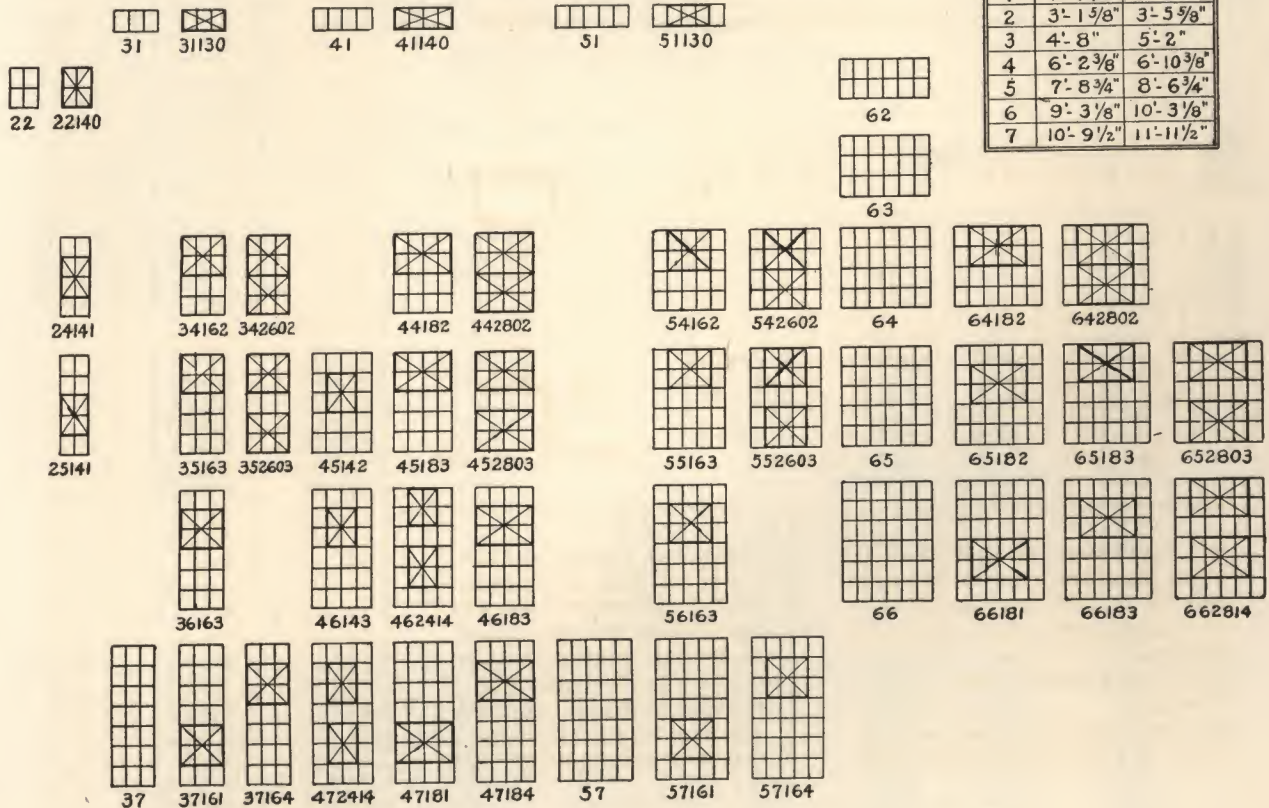
## STOCK AND STANDARD TYPES



SHADED UNITS  
ARE DEALER  
STOCKS

OPENING DIMENSIONS		
LIGHTS	GLASS	WIDTHS
WIDE	12"	14"
2	2'-1 5/8"	2'-5 5/8"
3	3'-2"	3'-8"
4	4'-2 3/8"	4'-10 3/8"
5	5'-2 3/4"	6'-0 3/4"
6	6'-3 1/8"	7'-3 1/8"
LIGHTS	GLASS	HEIGHT
HIGH	18"	20"
1	1'-7 1/4"	1'-9 1/4"
2	3'-1 5/8"	3'-5 5/8"
3	4'-8"	5'-2"
4	6'-2 3/8"	6'-10 3/8"
5	7'-8 3/4"	8'-6 3/4"
6	9'-3 3/8"	10'-3 3/8"
7	10'-9 1/2"	11'-11 1/2"

## LISTED SPECIAL TYPES

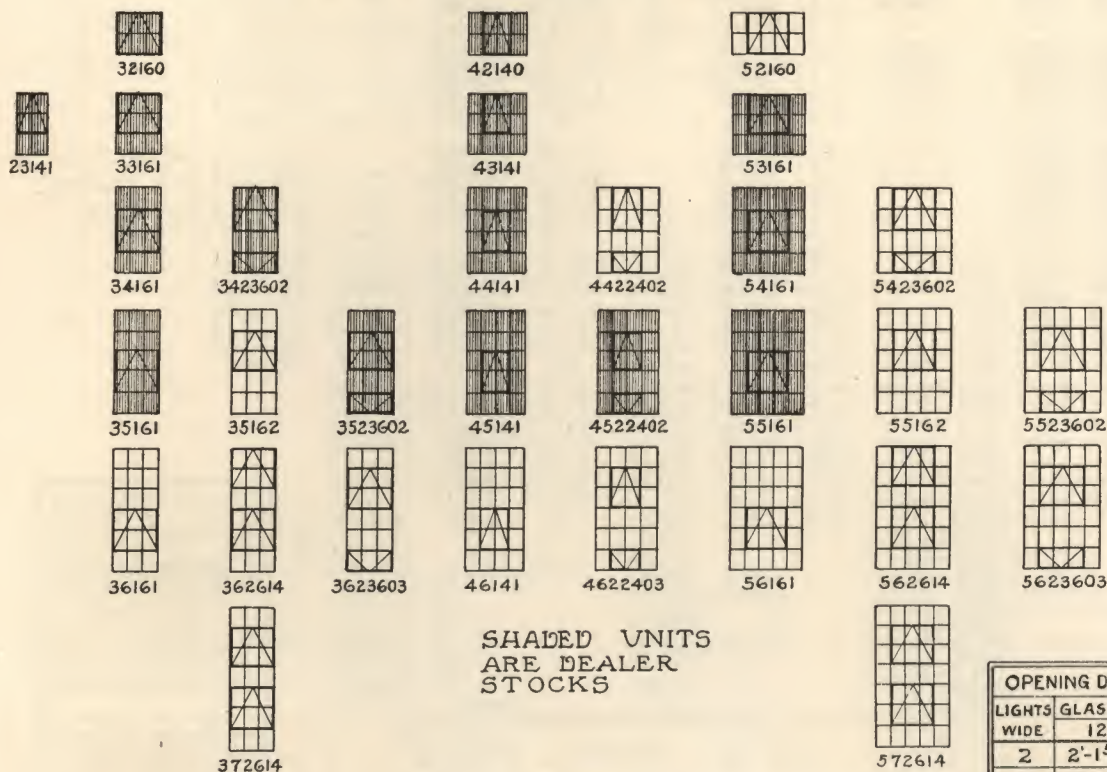




## STANDARD SIZES

Projected

## STOCK AND STANDARD TYPES



## LISTED SPECIAL TYPES



22140



24141



25141



34162



35163



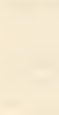
36163



37161



352603



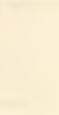
36163



37164



3523603



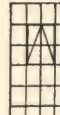
3723604



3723604



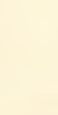
45142



46143



472414



462414



462414



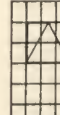
462414



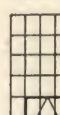
54162



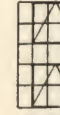
55163



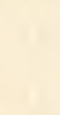
56163



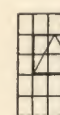
57161



552603





57164



5723604

OPENING DIMENSIONS		
LIGHTS WIDE	GLASS WIDTH	
	12"	14"
2	2'-1 5/8"	2'-5 5/8"
3	3'-2"	3'-8"
4	4'-2 5/8"	4'-10 3/8"
5	5'-2 3/4"	6'-0 3/4"
6	6'-3 1/8"	7'-3 1/8"
LIGHTS HIGH	GLASS HEIGHT	
	18"	20"
1	1'-7 1/4"	1'-9 1/4"
2	3'-1 5/8"	3'-5 5/8"
3	4'-8"	5'-2"
4	6'-2 3/8"	6'-10 3/8"
5	7'-8 3/4"	8'-6 3/4"
6	9'-3 1/8"	10'-3 1/8"
7	10'-9 1/2"	11'-11 1/2"

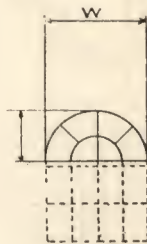
Note {  Vent opens out at bottom  
 Vent opens in at top



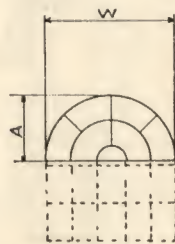
# STANDARD SIZES

Pivoted and Projected

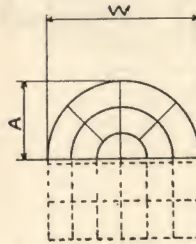
## CAMBER AND CIRCLE HEAD UNITS



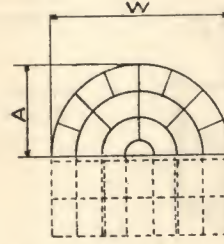
S-42



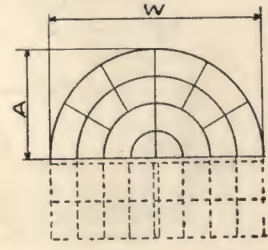
S-53



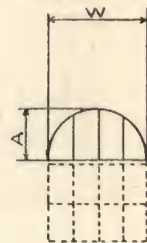
S-63



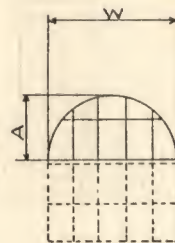
S-74



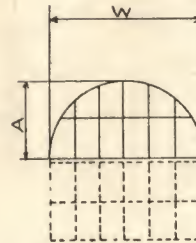
S-84



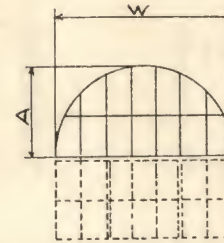
S-41



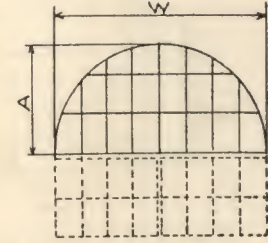
S-52



S-62



S-72



S-83

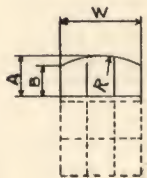
GLASS 12"x18" | 14"x20"  
W - 4-2 3/8 | 4-10 3/8  
A - 2-1 3/8 | 2-5 3/8

12"x18" | 14"x20"  
5-2 3/4 | 6-0 3/4  
2-7 3/8 | 3-0 3/8

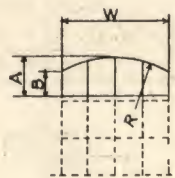
12"x18" | 14"x20"  
6-3 3/8 | 7-3 3/8  
3-1 3/8 | 3-7 3/8

12"x18" | 14"x20"  
7-9 3/4 | 8-11 1/4  
3-11 3/8 | 4-5 3/8

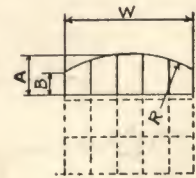
12"x18" | 14"x20"  
8-6 3/4 | 9-10 3/4  
4-3 3/8 | 4-11 3/8



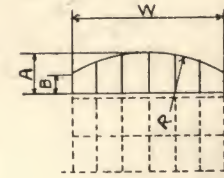
C-31



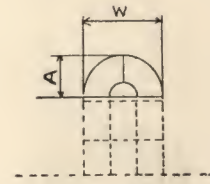
C-41



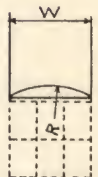
C-51



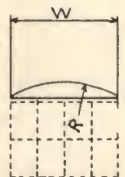
C-61



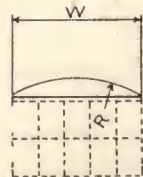
S-32



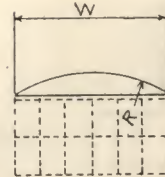
PH-3



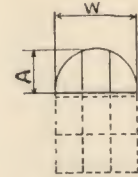
PH-4



PH-5



PH-6



S-31

GLASS 12"x18" | 14"x20"  
W - 3'-2" | 3'-8"  
A - 1'-6 3/8" | 1'-8 3/8"  
B - 1'-1" | 1'-2 1/4"  
R - 3'-2" | 3'-8"

12"x18" | 14"x20"  
4'-2 3/8" | 4'-10 3/8"  
1'-6 3/8" | 1'-8 3/8"  
0'-11 3/8" | 1'-0 5/8"  
4'-2 3/8" | 4'-10 3/8"

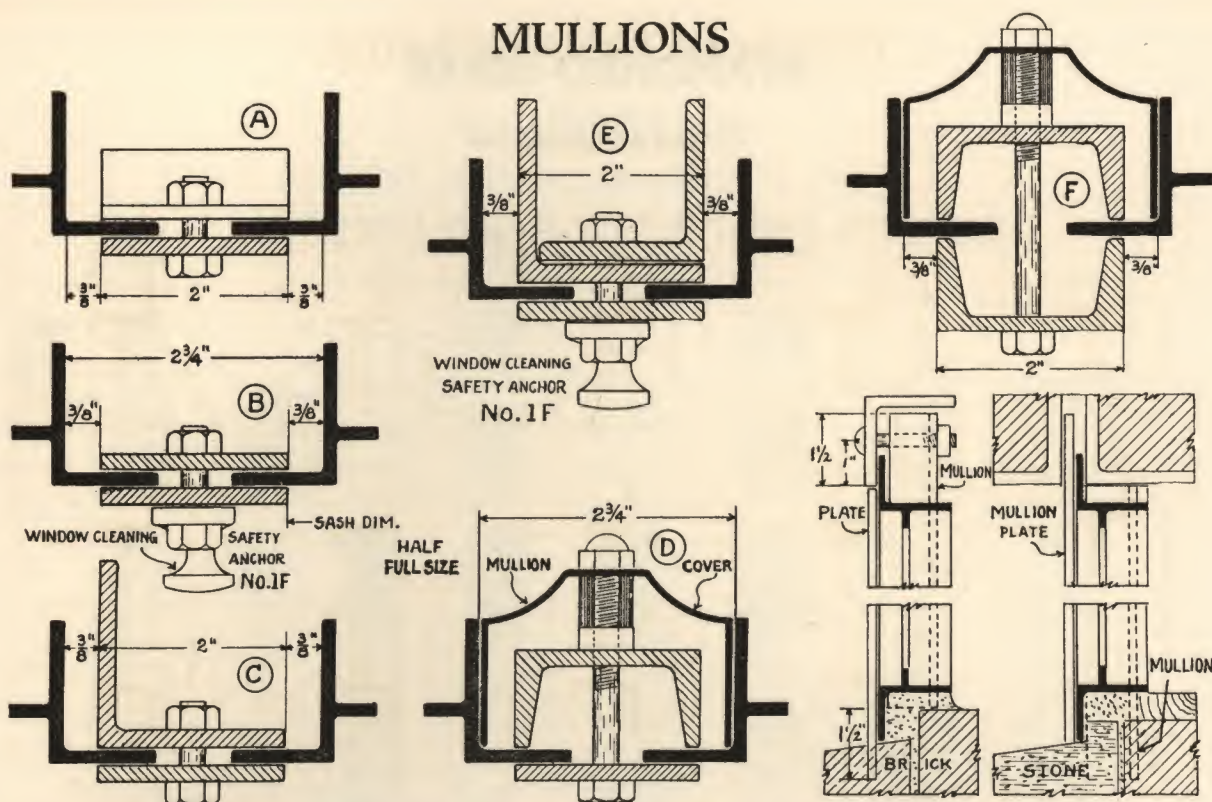
12"x18" | 14"x20"  
5'-2 3/4" | 6'-0 3/4"  
1'-6 3/8" | 1'-8 3/8"  
0'-9 1/8" | 0'-10 3/8"  
5'-2 3/4" | 6'-0 3/4"

12"x18" | 14"x20"  
6'-3 1/8" | 7'-3 3/8"  
1'-6 3/8" | 1'-8 3/8"  
0'-8 1/8" | 0'-8 7/8"  
6'-3 1/8" | 7'-3 3/8"

12"x18" | 14"x20"  
3'-2" | 3'-8"  
1'-7" | 1'-10"



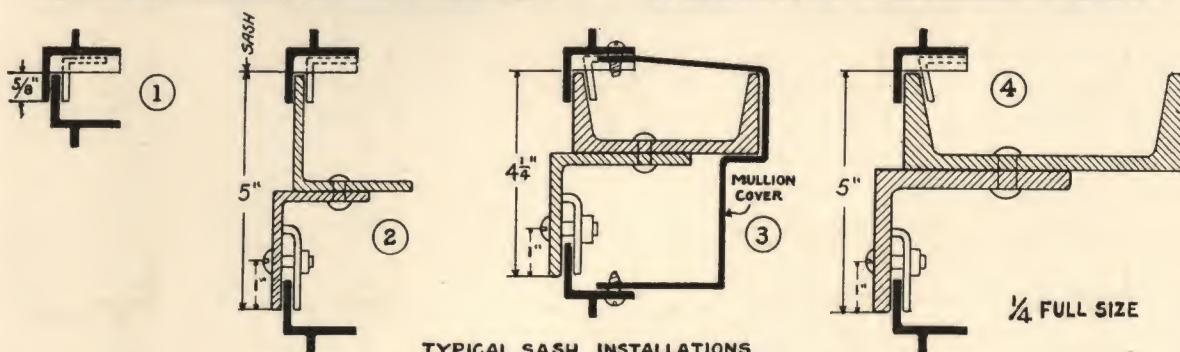
## MULLIONS



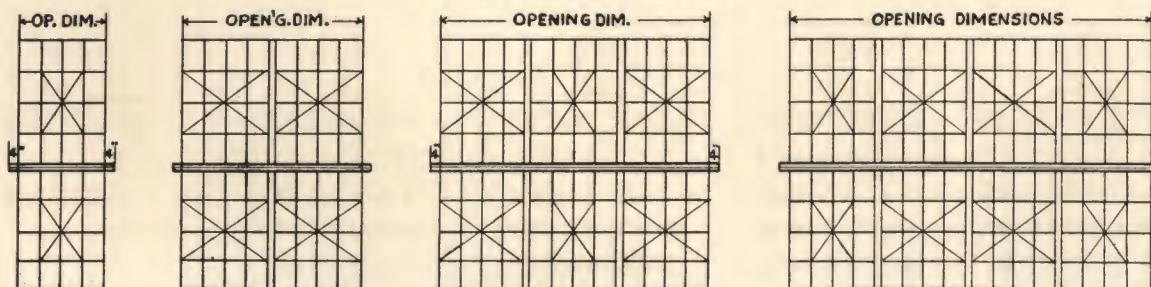
STANDARD VERTICAL MULLIONS ARE CONSTRUCTED FOR ANCHORAGE AT BOTH HEAD AND SILL. THE INNER MEMBER IS ATTACHED TO THE LINTEL BY BOLTING AND THE OTHER ONE TO THE SILL. IN CASE OF A DOUBLE ANGLE LINTEL THE MULLION MAY BE TURNED UPSIDE DOWN SO THE OUTSIDE PLATE WILL SLIP BETWEEN THE LINTEL ANGLES, AND THE INNER ONE WILL THEN BE ANCHORED TO THE SILL. MULLIONS D AND F—ONLY ARE FURNISHED WITH COVERS WHEN SPECIFIED.

STANDARD VERTICAL MULLIONS				
LIGHTS HIGH	NO.	REQUIRED		
		PLATES	ANGLES	CHANNELS
1 & 2	A	1-2" x 3/16"	CLIP	NONE
3 & 4	B	2-2" x 3/16"	NONE	NONE
5 & 6	C	1-2" x 3/16"	1-2" x 2" x 3/16"	NONE
7 & 8	D	1-2" x 3/16"	NONE	1-2"
	E	1-2" x 3/16"	1-2" x 2" x 3/16"	NONE
	F	NONE	1-1 3/4" x 1 3/4" x 3/16"	2-2"

LIGHTS WIDE 12"x18"	STANDARD HORIZONTAL MULLIONS				LIGHTS WIDE- 14"x20"
	NO.	REQUIRED		HEIGHT	
		ANGLES	CHANNELS		
3to5	1	Nos. 2 & 3 SASH BARS	NONE	5/8"	3to5
6to9	2	2-2½"x2½"x3/16"	NONE	5"	6to8
10to13	3	1-3½"x2½"x¼"	1-4"	4¼"	9to11
14to18	4	1-4"x3"x3/16"	1-6"	5"	12to16



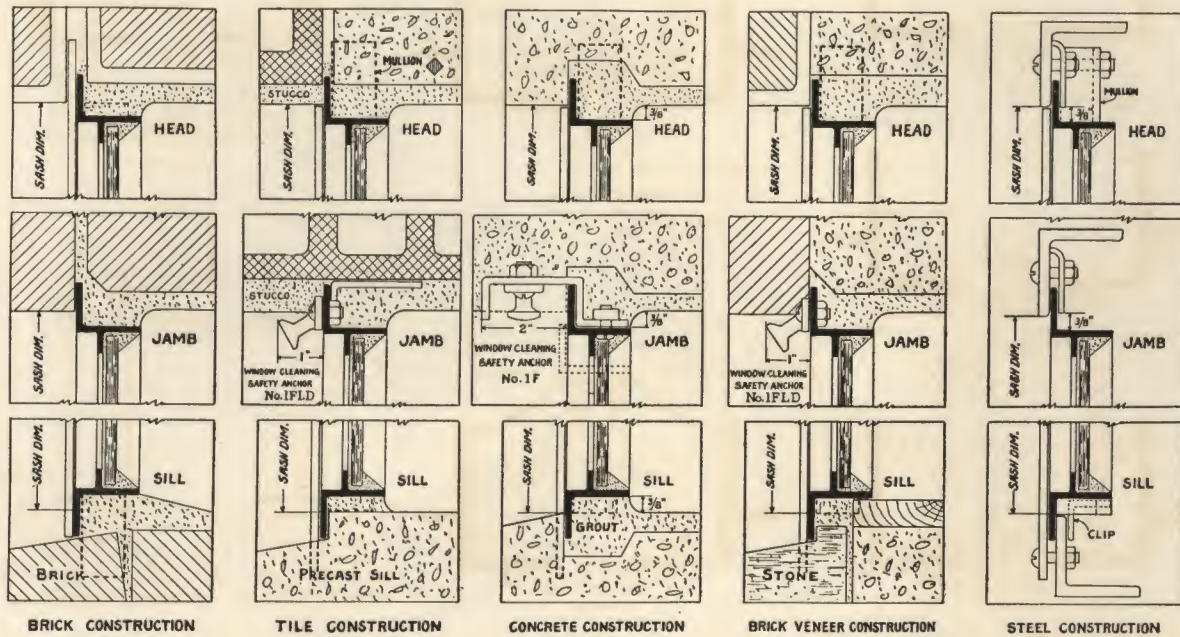
TYPICAL SASH INSTALLATIONS





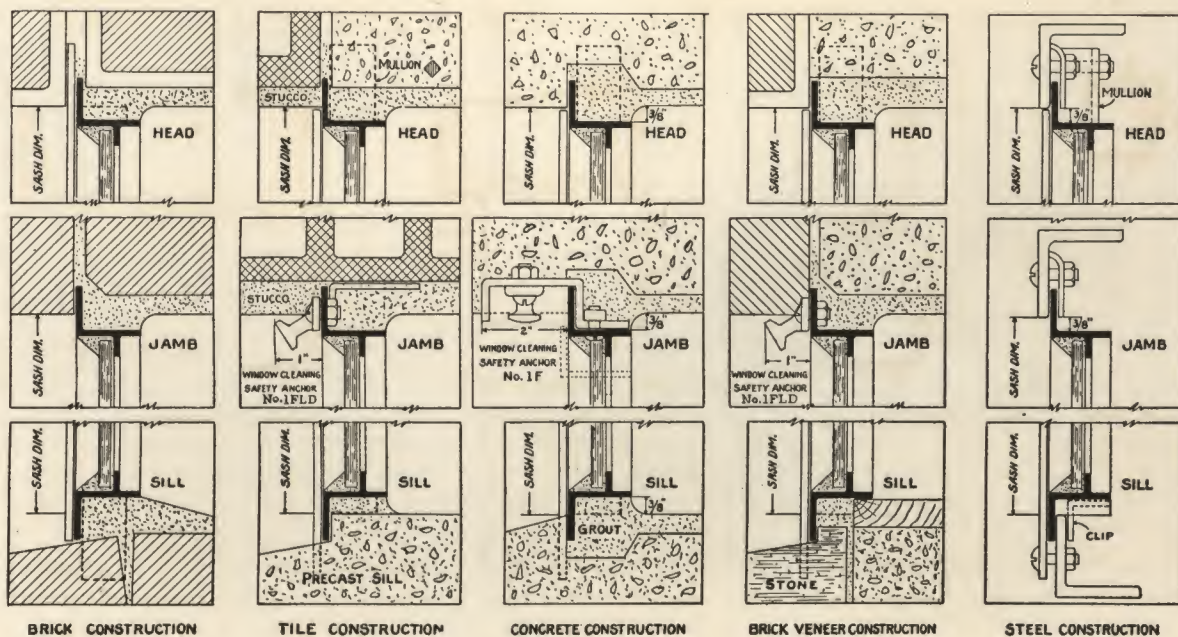
# INSTALLATION DETAILS

## Inside Glazing



Scale—3" = 1'

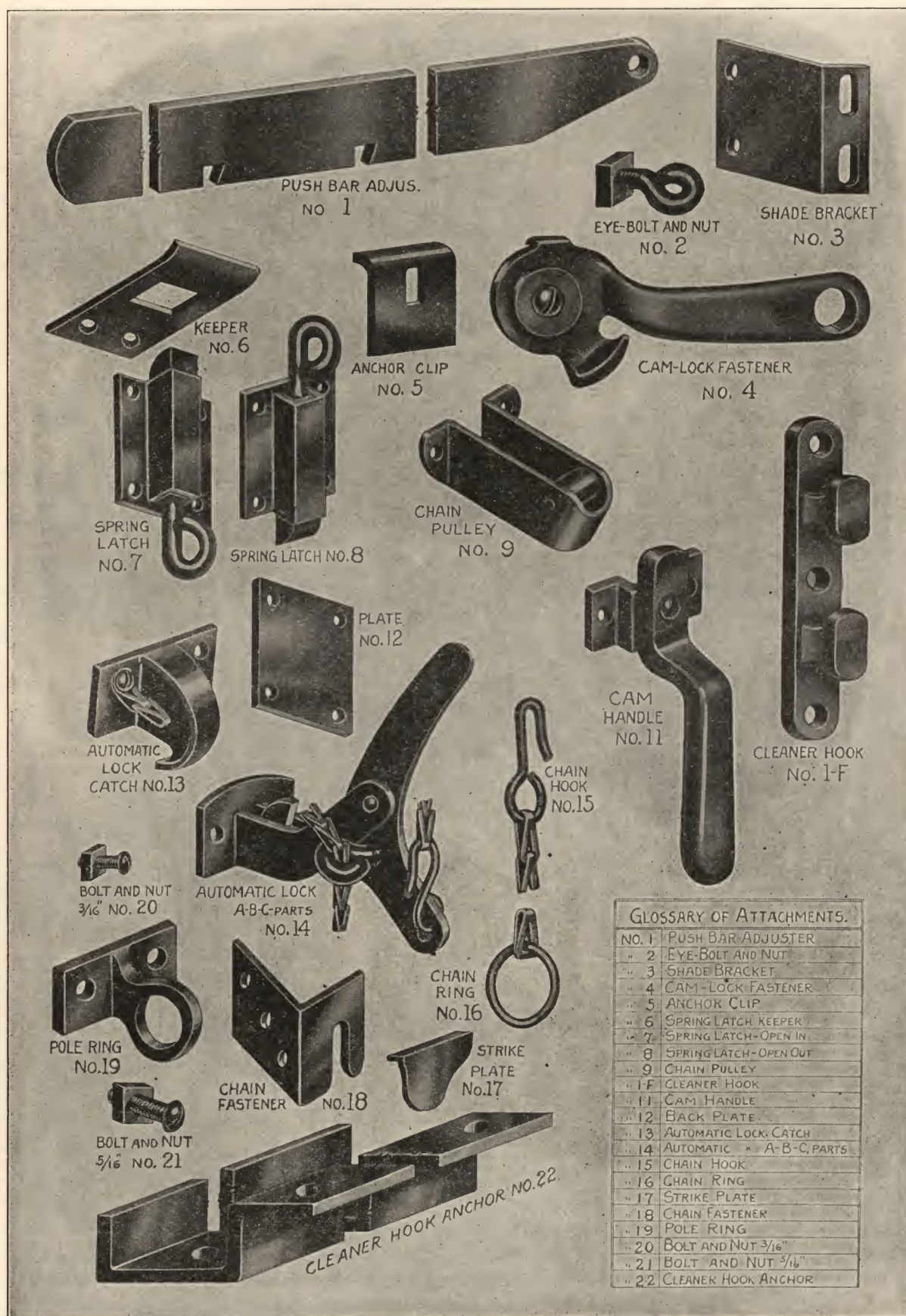
## Outside Glazing



Scale—3" = 1'



## MISCELLANEOUS FITTINGS



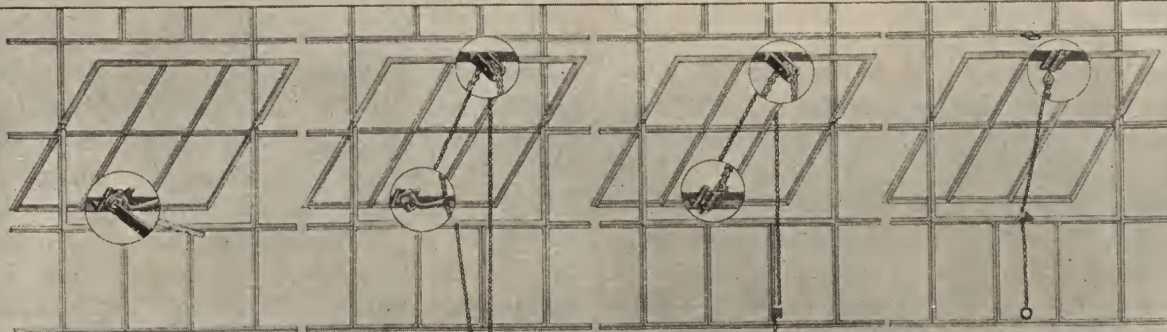
## GLOSSARY OF ATTACHMENTS.

NO. 1	PUSH BAR ADJUSTER
" 2	EYE-BOLT AND NUT
" 3	SHADE BRACKET
" 4	CAM-LOCK FASTENER
" 5	ANCHOR CLIP
" 6	SPRING LATCH KEEPER
" 7	SPRING LATCH-OPEN IN
" 8	SPRING LATCH-OPEN OUT
" 9	CHAIN PULLEY
" 1-F	CLEANER HOOK
" 11	CAM HANDLE
" 12	BACK PLATE
" 13	AUTOMATIC LOCK CATCH
" 14	AUTOMATIC " A-B-C-PARTS
" 15	CHAIN HOOK
" 16	CHAIN RING
" 17	STRIKE PLATE
" 18	CHAIN FASTENER
" 19	POLE RING
" 20	BOLT AND NUT 3/16"
" 21	BOLT AND NUT 5/16"
" 22	CLEANER HOOK ANCHOR



# HARDWARE APPLICATION

## PIVOTED



**APPLICATION No. 1**  
HORIZONTALLY PIVOTED  
HAND OPERATION  
STANDARD FOR VENTS WITHIN REACH

- 1 CAM LOCK No. 4
- 1 PUSH BAR No. 1
- 1 EYEBOLT AND NUT No. 2

**APPLICATION No. 2**  
HORIZONTALLY PIVOTED  
CHAIN OPERATION  
SUBSTITUTE FOR APPLICATION No. 3

- 1 CAM LOCK No. 4
- 2 PULLEYS No. 9
- 1 CHAIN HOOK No. 15
- 5 BOLTS AND NUTS No. 20
- 1 BOLT AND NUT No. 21
- 1 CHAIN AND FASTENER No. 18

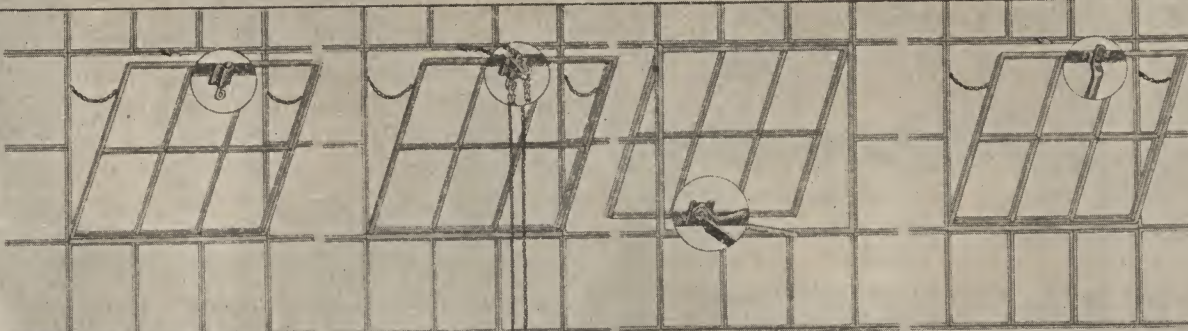
**APPLICATION No. 3**  
HORIZONTALLY PIVOTED  
CHAIN OPERATION  
STANDARD FOR VENTS OUT OF REACH

- 1 SPRING LATCH No. 8
- 1 PULLEY No. 9
- 1 CHAIN HOOK No. 15
- 4 BOLTS AND NUTS No. 20
- 1 CHAIN RING No. 16
- 1 CHAIN AND FASTENER No. 18

**APPLICATION No. 4**  
HORIZONTALLY PIVOTED  
CHAIN OPERATION  
STANDARD FOR SCREENING

- 1 SPRING LATCH No. 7
- 1 CHAIN RING No. 16
- 1 CHAIN HOOK No. 15
- 4 BOLTS AND NUTS No. 20
- 1 KEEPER No. 6
- 1 PLATE No. 12
- 1 CHAIN AND FASTENER No. 18

## PIVOTED



**APPLICATION No. 5**  
BOTTOM PIVOTED SWING IN AT TOP  
POLE OPERATION  
STANDARD FOR ALL VENTS OUT OF REACH

- 1 SPRING LATCH No. 7
- 1 PLATE No. 12
- 1 KEEPER No. 6
- 6 BOLTS AND NUTS No. 20

**APPLICATION No. 6**  
BOTTOM PIVOTED SWING IN AT TOP  
CHAIN OPERATION  
SUBSTITUTE FOR POLE OPERATION No. 5

- 1 SPRING LATCH No. 7
- 1 PULLEY No. 9
- 2 CHAIN HOOKS No. 15
- 1 KEEPER No. 6
- 1 PLATE No. 12
- 4 BOLTS AND NUTS No. 20
- 1 CH. & FAST. 18.

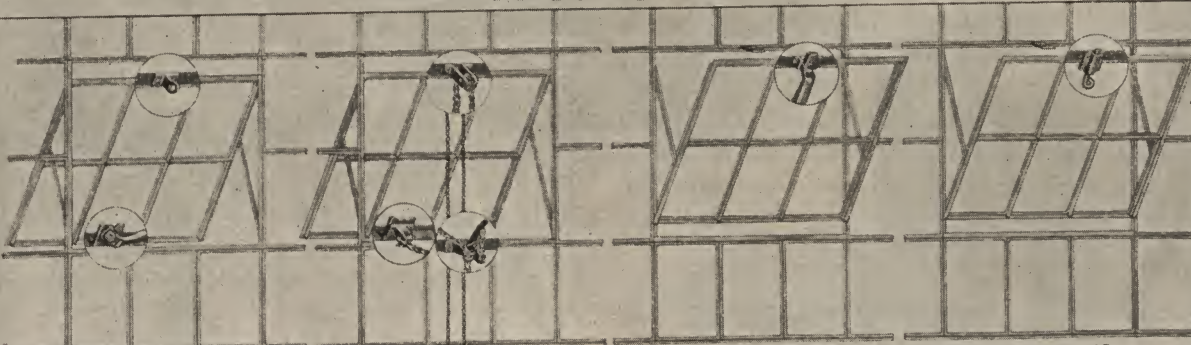
**APPLICATION No. 7**  
TOP PIVOTED SWING OUT AT BOTTOM  
HAND OPERATION  
STANDARD FOR ALL VENTS.

- 1 CAM LOCK No. 4
- 1 PUSH BAR No. 1
- 1 EYEBOLT AND NUT No. 2

**APPLICATION No. 8**  
BOTTOM PIVOTED SWING IN AT TOP  
HAND OPERATION  
SUBSTITUTE FOR APPLICATION No. 5

- 1 CAM HANDLE No. 11
- 1 KEEPER No. 6
- 4 BOLTS AND NUTS No. 20

## PROJECTED



**APPLICATION No. 9**  
PROJECTED OUT AT BOTTOM  
HAND OR POLE OPERATION  
STANDARD FOR ALL VENTS

- 1 CAM LOCK No. 4
- 1 POLE RING No. 19
- 2 BOLTS AND NUTS No. 20
- 1 BOLTS AND NUTS No. 21

**APPLICATION No. 10**  
PROJECTED OUT AT BOTTOM  
CHAIN OPERATION  
SUBSTITUTE FOR POLE OPERATION No. 9

- 1 AUTOMATIC LOCK No. 14 CONSISTING UP-  
1 EA. CAM-A, BRACK-B, EYEBOLT-C
- 1 CATCH No. 13
- 1 PULLEY No. 9
- 1 CHAIN HOOK No. 15
- 7 BOLTS AND NUTS No. 20

**APPLICATION No. 11**  
PROJECTED IN AT TOP  
HAND OPERATION  
STANDARD FOR ALL VENTS WITHIN REACH

- 1 CAM HANDLE No. 11
- 1 KEEPER No. 6
- 4 BOLTS AND NUTS No. 20

**APPLICATION No. 12**  
PROJECTED IN AT TOP  
POLE OPERATION  
FOR CHAIN OPERATION SUBSTITUTE No. 6

- 1 SPRING LATCH No. 7
- 1 PLATE No. 12
- 6 BOLTS AND NUTS No. 20
- 1 KEEPER No. 6



## GENERAL INFORMATION

### CONTINUOUS WINDOWS

#### USES

Mesker's Continuous Sash is designed for industrial use where lighting and ventilation are prime requisites † It forms a perfect ventilating system, especially where there is large quantities of gases to be carried off, and their lighting features very closely approximate the skylight † They form an awning-like watershed which permits them to be satisfactorily left open during inclement weather † Mass control is a feature to be given consideration † No other type of window so adapts itself to long runs of continuous opening controlled centrally † Page 35 is devoted to suggested roof designs where continuous sash has proved particularly effective † It is equally effective in sidewall construction where long runs are required for ventilation † (See page 32 †)

#### FLASHING

It is recommended that all sash be fully flashed as shown on the details † The sash are weather tight, however, under normal conditions and the flashing may be omitted, with the exception of the flashing on the girt angle joints, where small condensation drippings are unimportant † Flashing is always furnished under another contract †

#### GLAZING

Quarter-inch ribbed glass is always used in continuous sash † The ribs should be placed on the side least exposed to dust and dirt † A special putty which always retains a certain degree of plasticity should be used for bedding the glass † Face putty is not used except at the sill † The glass is held in with special angle clips bolted through the sash muntins only †

#### TOP HUNG vs. CENTER PIVOTED

Center pivoted continuous sash can be furnished but is not recommended due to inherent difficulties in weatherproofing † It gives more ventilation and operates easier, but should only be used when maximum ventilation for minimum space is absolutely necessary †

#### STRUCTURAL STEEL

Clearances as shown in details should be carefully adhered to † All girt and sill angles should be furnished and punched by the steel contractor in accordance with the sash manufacturer's standard and should be true and straight to insure a well-fitting installation † They should be directly attached to the columns to avoid faulty alignment † Where double rows occur an intermediate angle of at least 4" should be used † A 3" angle will suffice in other cases †

#### SIZES

Twenty-foot lengths are standard and any multiple of that length is obtainable through the use of Mesker expansion mullion † Twenty-foot column spacing is also recommended as being the simplest and most practical † Standard heights are 3', 4', 5', 6' † Wherever possible standards should be used; however, specials may be made to fit any opening by using special end runs † A stationary panel, for weathering purposes, is furnished at the ends of every top hinged run † Further weathering may be had by the use of storm panels, which prevents the leakage of water around the ends when the sash are open † Only two sizes of glass are required. Detailed information covering standard sizes is shown on page 34 †

#### INFORMATION REQUIRED WITH ORDER

1 † It is necessary to furnish a drawing, giving the opening sizes, head, sill and jamb details with all orders for continuous windows † It should also be noted on the drawing whether or not the windows are to be stationery or ventilating †

2 † Are we to include the mechanical operator for ventilating units? If so, furnish complete steel details †

3 † Are we to furnish glass and putty? (If so, state kind of glass and color of putty †) One-fourth inch thick glass must be used †

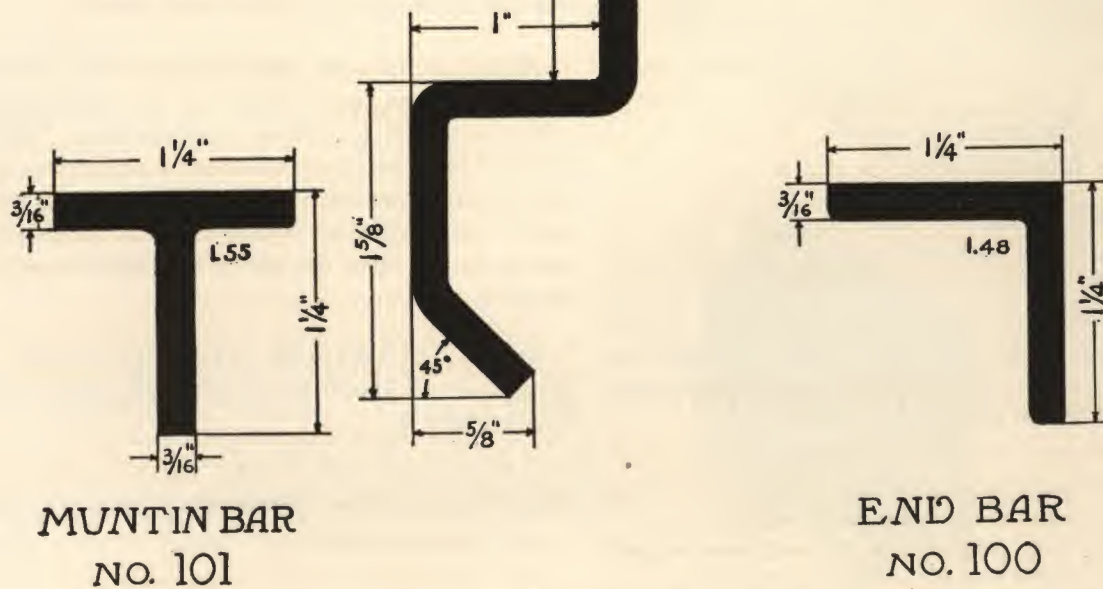
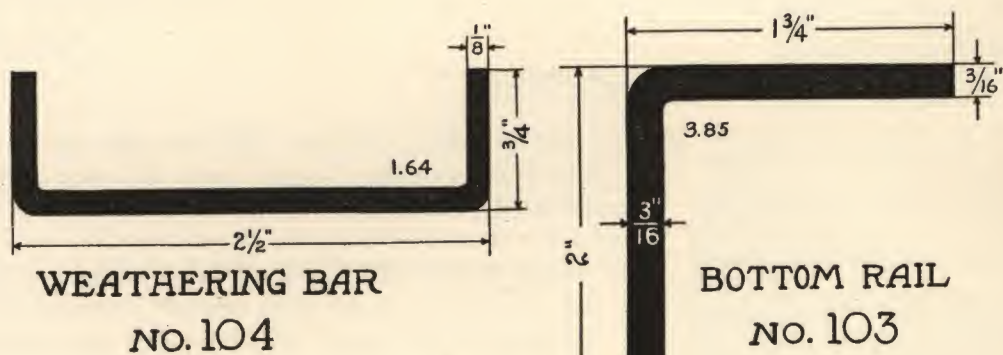
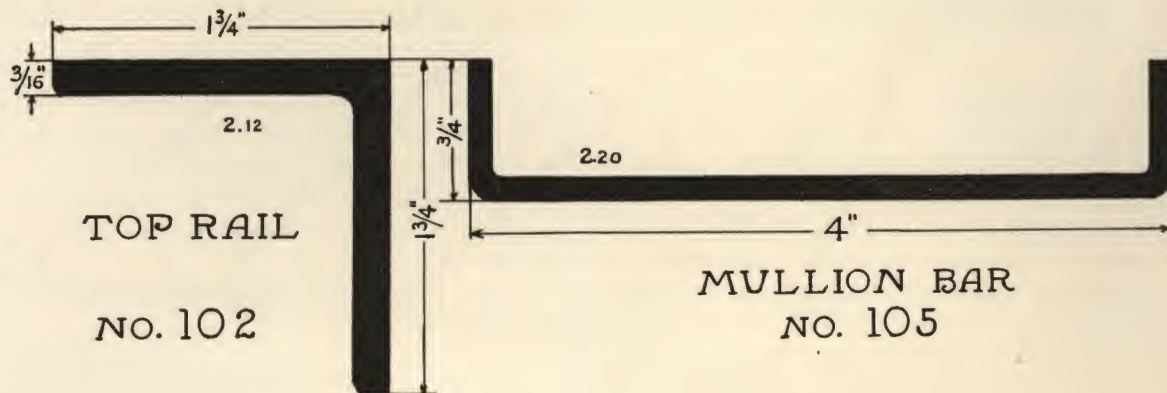
4 † Billing address †

5 † Consignee and shipping address †

6 † Routing †

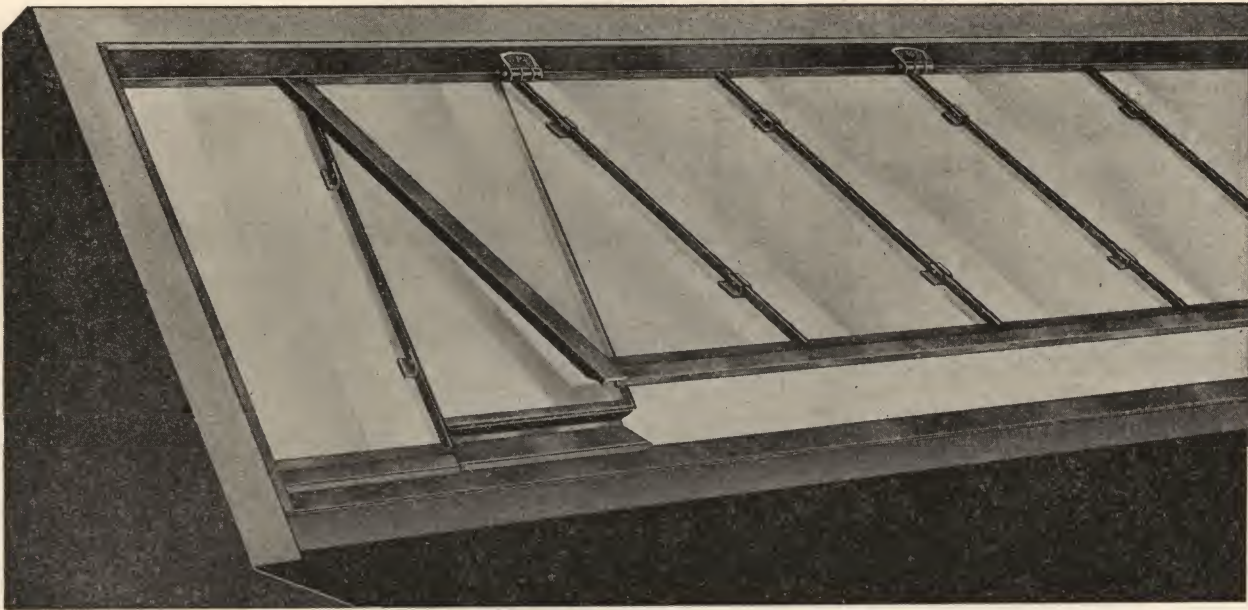


# FULL SIZE SECTIONS





## CONTINUOUS WINDOWS



### SPECIFICATIONS

**GENERAL**—All Continuous Sash shall be Mesker's as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**MATERIAL**—All members shall be one piece sections from low carbon, hot rolled billet steel (or Genuine Wrought Iron) not less than 3/16" thick † All weathering and expansion joint members shall be formed from 11-gauge material † A sufficient quantity of glazing angle clips with all nuts and bolts shall be provided †

**CONSTRUCTION** — Sash shall be made in standard units and fastened together with expansion joints † All intersections shall be solidly welded † Heavy malleable iron hinges shall be solidly riveted to sash and provided with adjustable bolt holes for fastening to steel work † Stationary end panels shall be furnished at the ends of all runs †

**PAINTING**—All sash shall have one dip coat of rust-resisting mineral paint, grey in color, before shipment †

**GLAZING**—All sash shall be glazed on the outside with quarter-inch glass bedded in special non-hardening putty struck off flush with face of glass and held in place with special angle clips †

**ERECTION**—All sash shall be hung carefully, having all steel work trued up by steel contractor where necessary † Where stationary end lights are omitted the general contractor shall erect special weathering members furnished by the sash contractors † Girt punching details shall be furnished steel contractor by sash contractor to insure correct steel design †

**SHOP DRAWINGS**—The manufacturer shall furnish detail drawings for approval before fabrication is begun †

- NOTES**—1 † All continuous sash may be furnished in Genuine Wrought Iron in slightly different construction due to the difficulty in securing certain sections †
- 2 † Storm panels may be furnished where required †
- 3 † Continuous sash cannot be labeled †
- 4 † Erection and glazing may be done by sash contractor †
- 5 † All flashing and structural work come under other headings †



## SALIENT FEATURES

### SECTIONS

Mesker's Continuous Sash sections are unusually heavy, having nominal thickness of  $3/16$ " for all supporting members and  $1/8$ " for all weathering members † The muntins are  $1\frac{1}{4}$ "x $3/16$ " tee bars,  $1\frac{1}{4}$ "x $3/16$ " jamb angles,  $1\frac{3}{4}$ "x $3/16$ " angle top rail and a bottom member specially designed to give sufficient lap for proper weathering and weighing in excess of  $3\frac{1}{2}$  lbs. per foot make up the list of sections †

### WELDING

All joints are solidly welded, insuring a stiff and strong construction not capable of being easily racked out of shape as is the case with riveted construction †

### HINGES

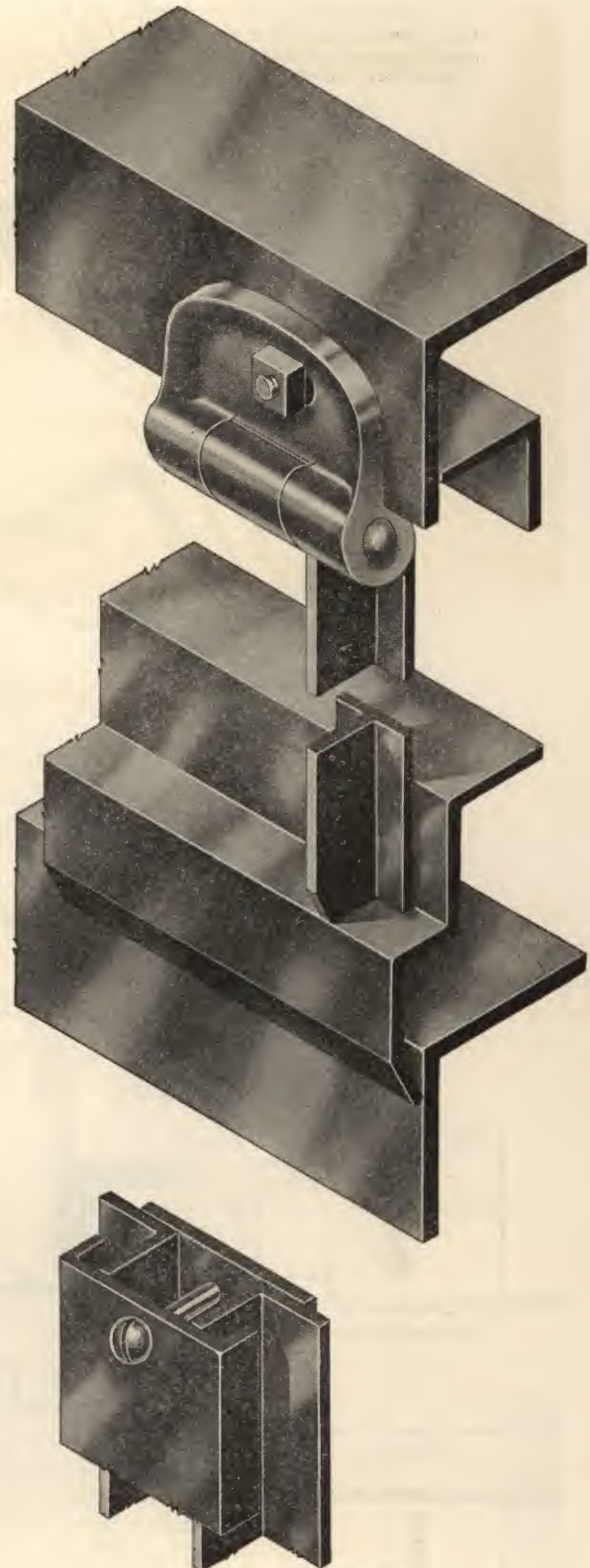
Extra heavy malleable iron hinges with bronze pins are spaced approximately 4' on center † The hinges are attached on the outside of the girt angle to eliminate the necessity of notching the top rail and the inevitable leakage around such notches frequently found in other makes † The hinges are normally heavier than the girt angle and hence would not be subject to defects by corrosion †

### EXPANSION JOINTS

Standard lengths are joined in a continuous run by means of specially designed expansion joints which permit irregularities in the building to be taken up and prevents glass breakage, due to weaving and expansion, frequently found in sash where the parts are spliced together †

### WEATHERING

A three-quarter inch lap at both head and sill in conjunction with double contact at the jambs furnishes an unusually well-weathered sash † It has been designed so that it forms a perfect watershed at all points †





# CONSTRUCTIONS DETAILS

WHEN COMPLETE FLASHING HERE SHOWN IS NOT USED, GIRT ANGLE JOINT FLASHING IS NECESSARY, SEE DETAILS ELSEWHERE.

STRUCTURAL STEEL NOT FURNISHED BY MESKER BROS. I.CO.

FLASHING NOT FURNISHED BY MESKER BROS. I.CO.

CROSS SECTION FIXED PANEL

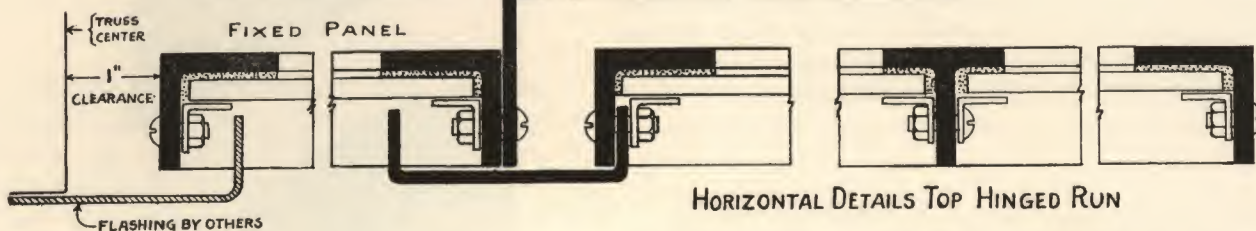
CROSS SECTION TOP HINGED AND STORM PANEL

DETAILS  
WHEN SASH STARTS  
WITH STORM PANEL

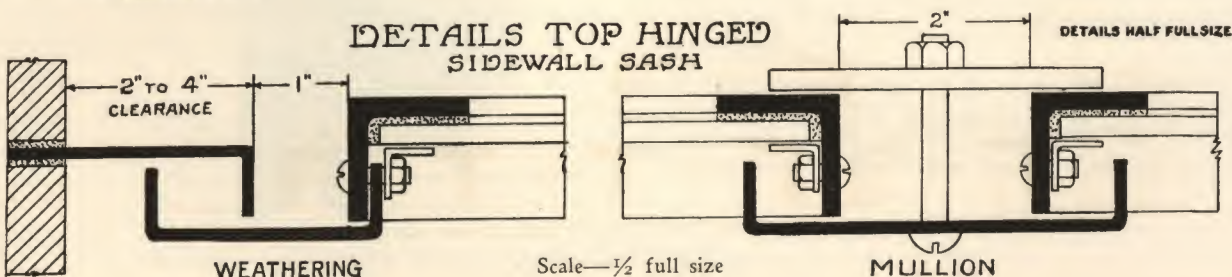
STORM PANEL

STORM PANELS ARE FURNISHED AS AN EXTRA

FIXED PANEL

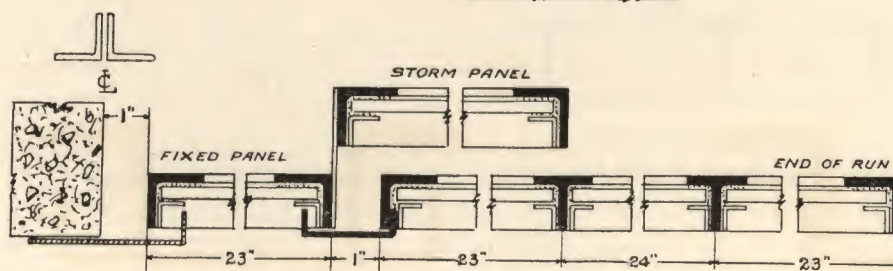
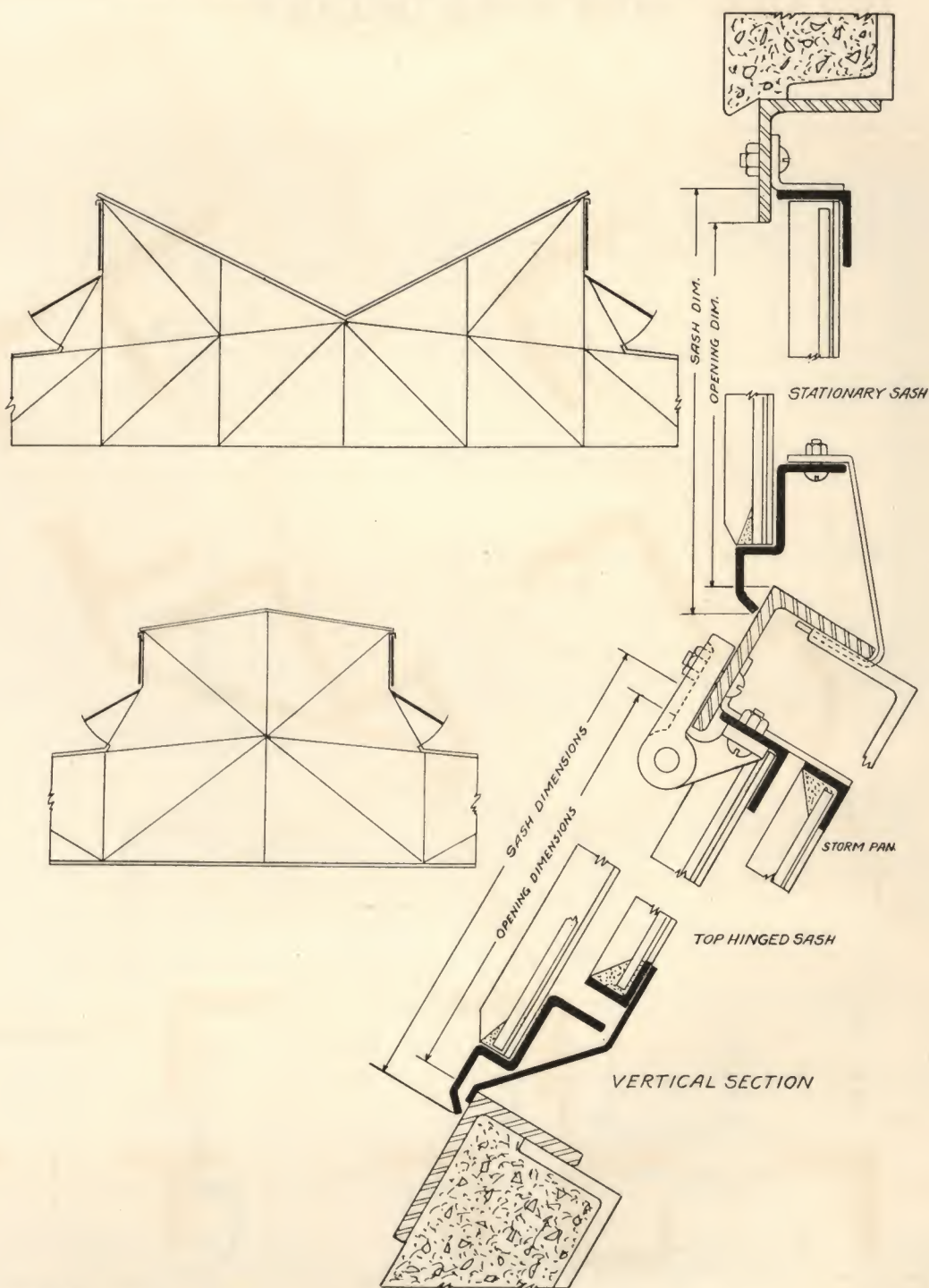


DETAILS TOP HINGED  
SIDEWALL SASH





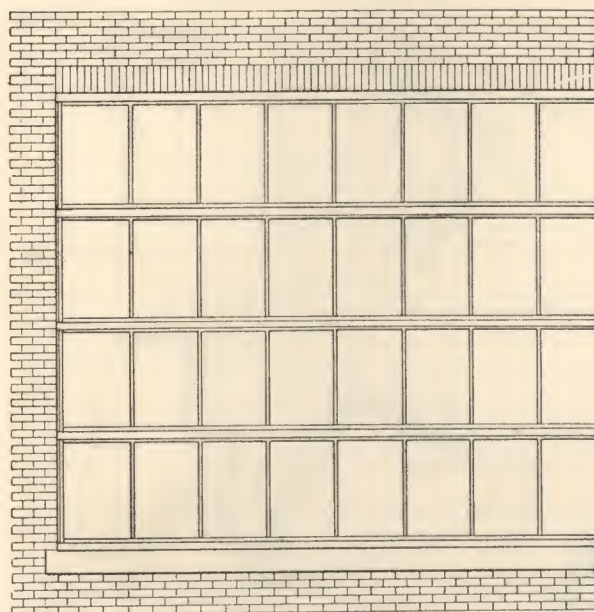
# VERTICAL AND SLOPING DETAILS



Scale—3" = 1'

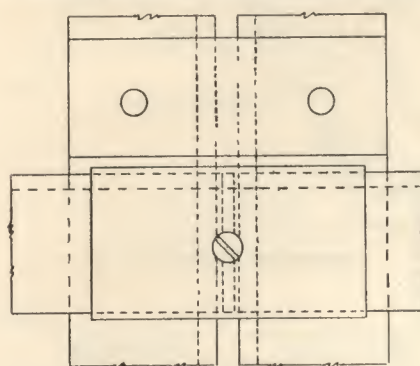


## SIDE WALL DETAILS

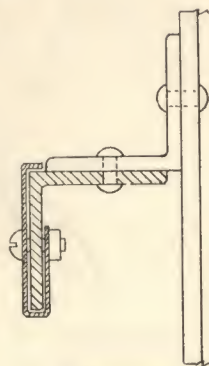


ELEVATION

GIRT ANGLE JOINT FLASHING ESSENTIAL WHERE COMPLETE FLASHING, SHOWN ELSEWHERE, IS NOT USED.

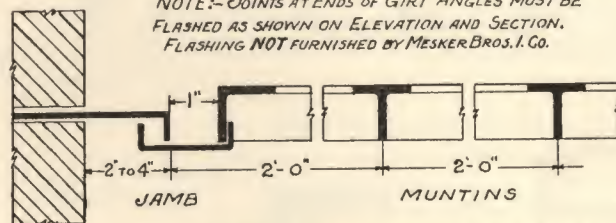


ELEVATION

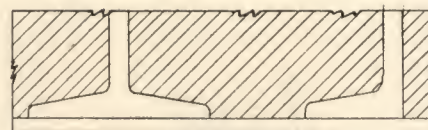


SECTION

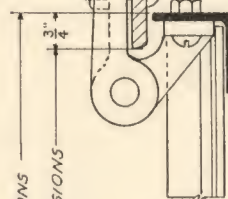
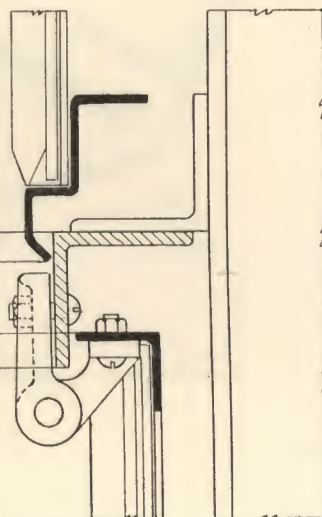
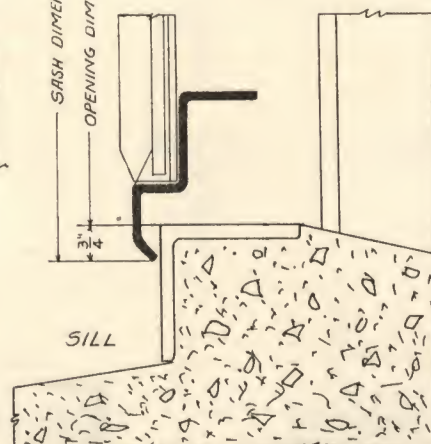
NOTE: JOINTS AT ENDS OF GIRT ANGLES MUST BE FLASHED AS SHOWN ON ELEVATION AND SECTION. FLASHING NOT FURNISHED BY MESKER BROS. & CO.



HORIZONTAL SECTION



HEAD

SASH DIMENSIONS  
OPENING DIMENSIONSSASH DIMENSIONS  
OPENING DIMENSIONS

SILL

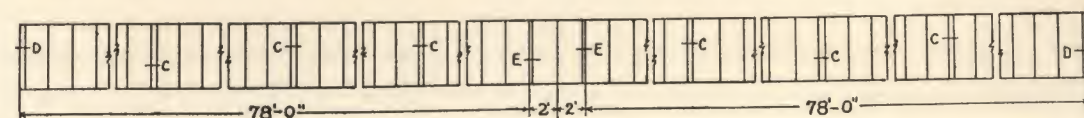
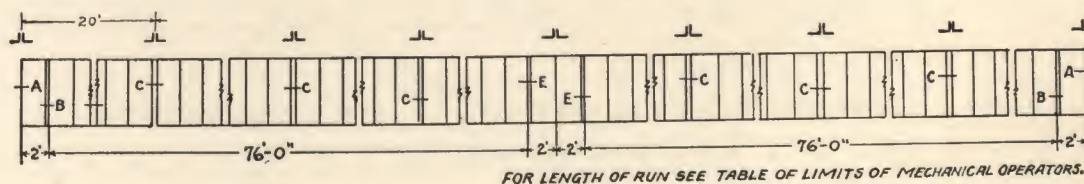
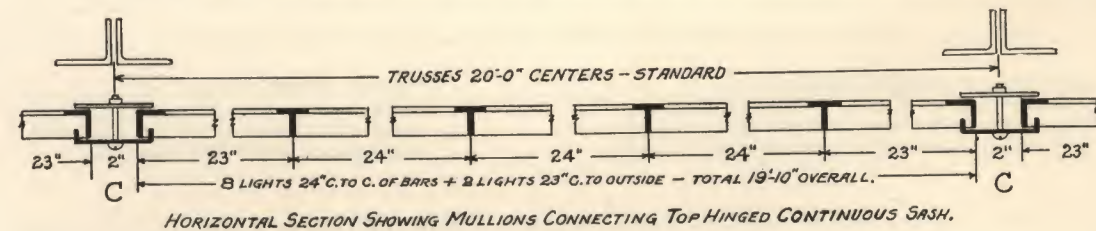
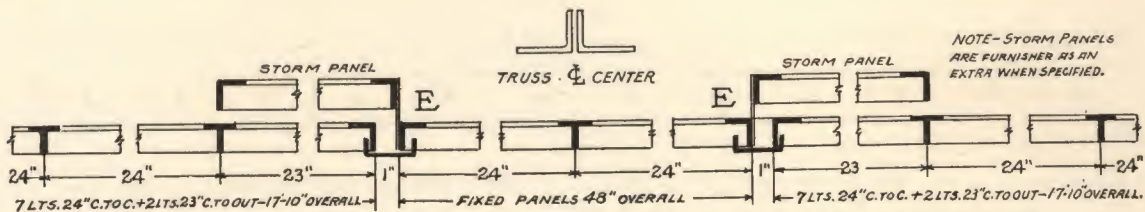
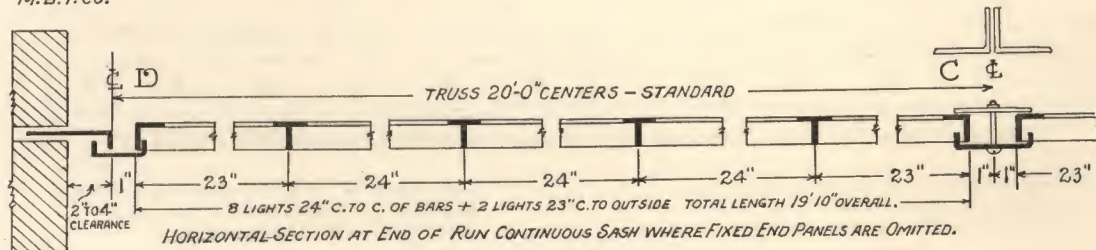
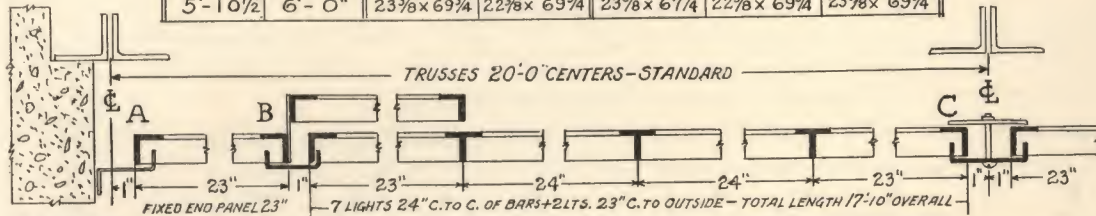
VERTICAL SECTION

Scale—3" = 1'



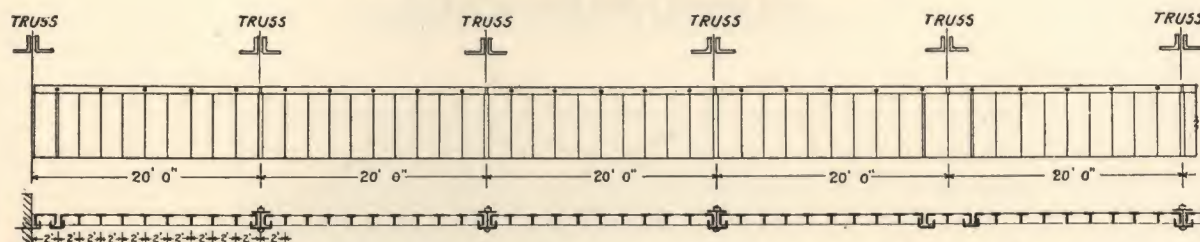
# STANDARD SIZES

TABLE OF STANDARD OPENINGS AND SASH.		TABLE OF GLASS SIZES					
OPEN'G. HG'T.	SASH HG'T.	HINGED SASH		FIXED SASH			
		STANDARD LTS.	END LIGHTS	STORM LTS.	END LIGHTS	CENTER LTS.	
2'-10 1/2"	3'-0"	23 3/8" x 33 3/4"	22 3/8" x 33 3/4"	23 3/8" x 31 1/4"	22 3/8" x 33 3/4"	23 3/8" x 33 3/4"	
3'-10 1/2"	4'-0"	23 3/8" x 45 3/4"	22 3/8" x 45 3/4"	23 3/8" x 43 1/4"	22 3/8" x 45 3/4"	23 3/8" x 45 3/4"	
4'-10 1/2"	5'-0"	23 3/8" x 57 3/4"	22 3/8" x 57 3/4"	23 3/8" x 55 1/4"	22 3/8" x 57 3/4"	23 3/8" x 57 3/4"	
5'-10 1/2"	6'-0"	23 3/8" x 69 3/4"	22 3/8" x 69 3/4"	23 3/8" x 67 1/4"	22 3/8" x 69 3/4"	23 3/8" x 69 3/4"	

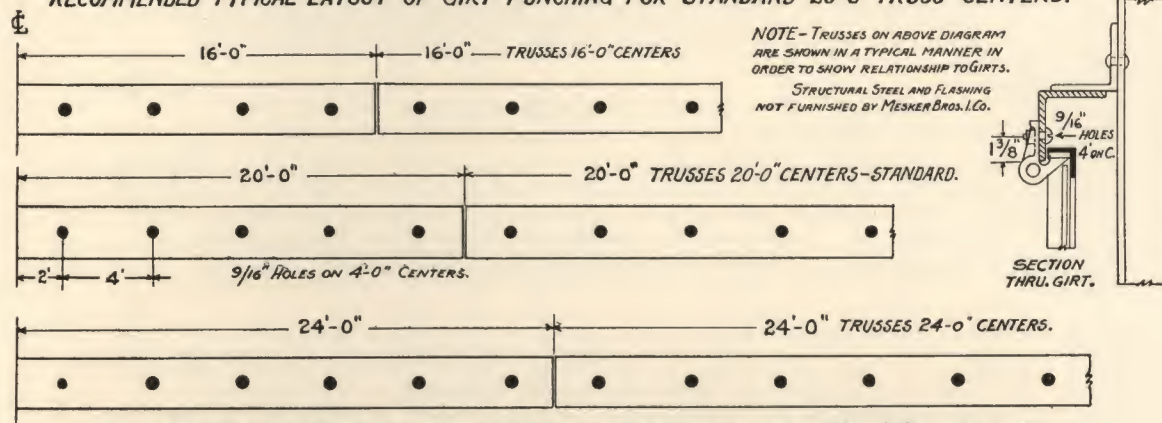




## GIRT ANGLE PUNCHING



RECOMMENDED TYPICAL LAYOUT OF GIRT PUNCHING FOR STANDARD 20'-0" TRUSS CENTERS.

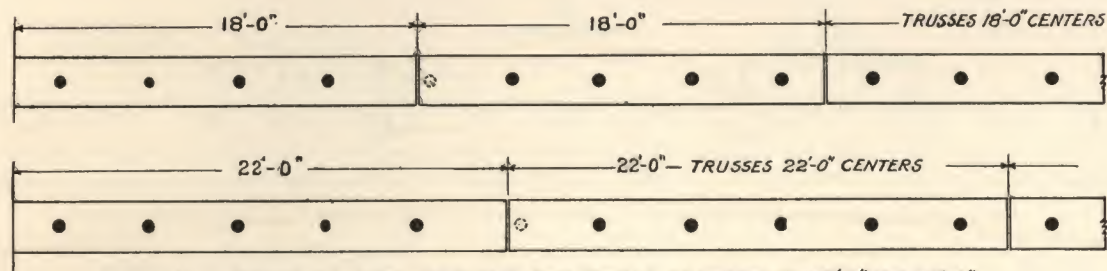


TYPICAL LAYOUT OF GIRT PUNCHING FOR TRUSS CENTERS OF 16'-0", 20'-0" AND 24'-0"

TRUSS CENTERS OF 16', 20', AND 24 FT. REQUIRE ONLY ONE STYLE GIRT ANGLE AND ARE, THEREFORE, RECOMMENDED AS BEING THE MOST PRACTICAL.

TRUSS CENTERS 18' AND 22 FT. REQUIRE TWO STYLES OF GIRT ANGLES, -ONE RIGHT AND ONE LEFT- AND SHOULD THEREFORE BE AVOIDED WHENEVER POSSIBLE.

WINDOWS MUST START ON CENTER LINE OF TRUSS TO MATCH THE PUNCHING SHOWN ON THIS DRAWING.



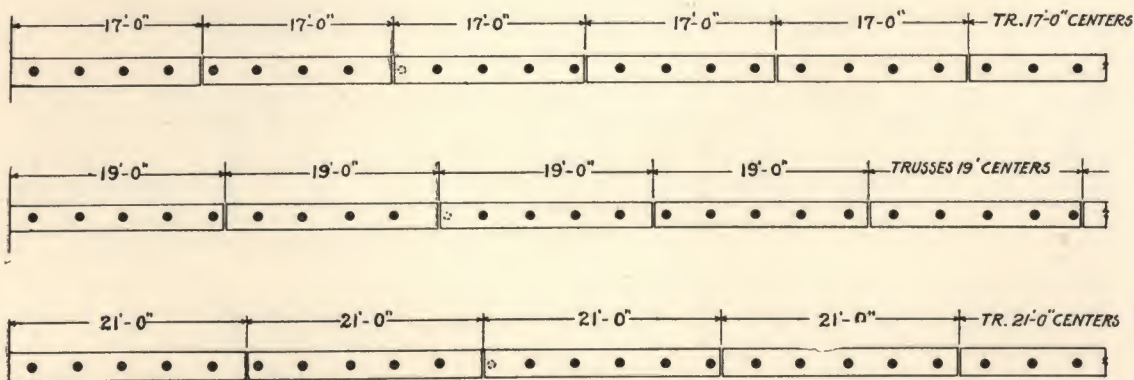
TYPICAL LAYOUT OF GIRT PUNCHING FOR TRUSS CENTERS OF 18'-0" AND 22'-0"

## SPACING OF TRUSS CENTERS:-

TRUSS CENTERS OF 17', 19', 21', 23' AND 25'-0" REQUIRE FOUR STYLES OF GIRT PUNCHING - TWO RIGHT AND TWO LEFT- AND SHOULD THEREFORE BE AVOIDED WHENEVER POSSIBLE.

## GIRT PUNCHING:-

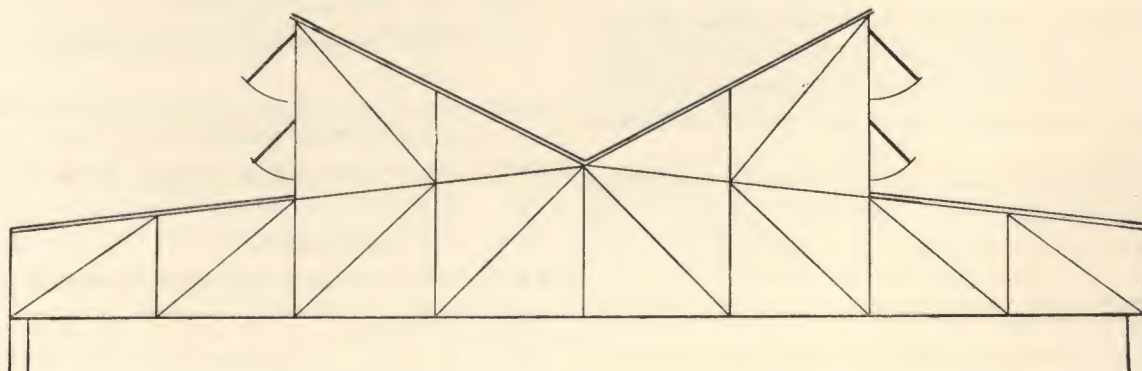
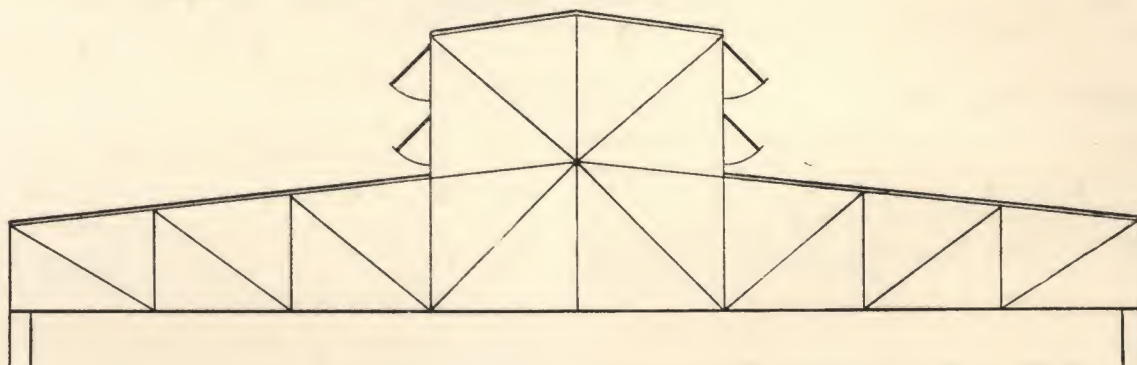
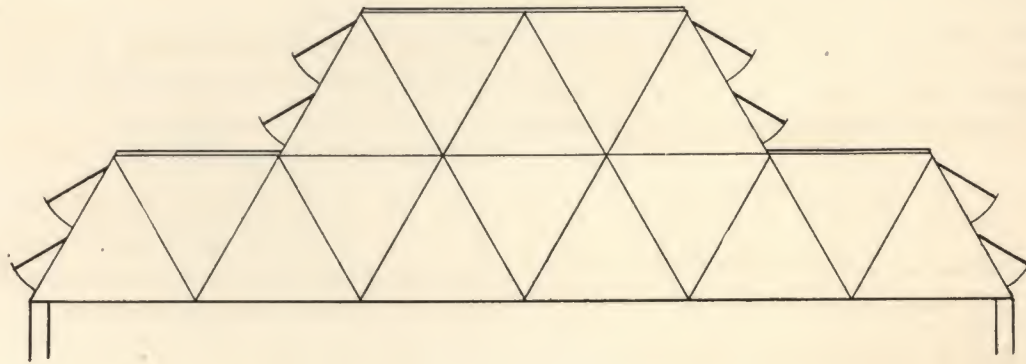
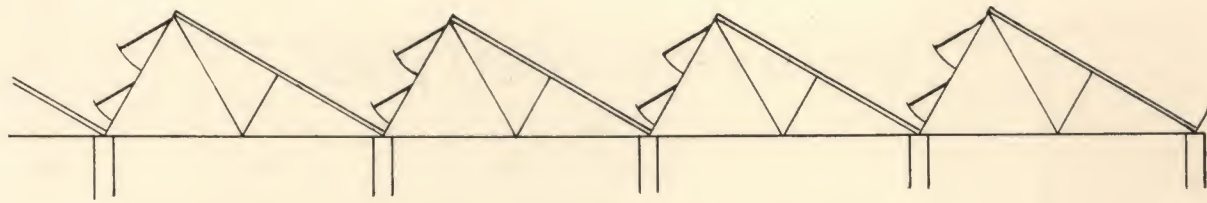
HOLES OCCURRING AT JOINT OF GIRTS SHOULD BE OMITTED. SUCH HOLES WILL BE LOCATED AND PUNCHED BY WINDOW ERECTORS.



TYPICAL LAYOUT OF GIRT PUNCHING FOR TRUSS CENTERS OF 17'-0", 19'-0" AND 21'-0"



# ROOF DESIGNS





## GENERAL INFORMATION

### MECHANICAL OPERATORS

#### USES

Mechanical operators find their greatest use in buildings where group control is necessary to the ventilating efficiency, or where hand or chain operation is either impossible or impracticable † It is recommended that where there are many ventilators to be controlled ten or more feet above the floor, mechanical operators be used to give satisfactory service †

#### TYPES

In order to operate a particular installation satisfactorily, different types of operators are required † While one or two styles could be made to take care of all conditions, it would not give the maximum in economy or efficiency † For that reason Mesker is in position to supply a style of operator for every condition † Our engineering department is at your service, and will welcome the opportunity of recommending and designing the proper layout †

#### TORSION (Page 38)

This type of operator is the most economical where the load is not too great † It is very simple and easy both to install and operate, and is by far the most popular type † The table of limits should always be consulted before specifying any particular type (see page 48) †

#### RACK AND PINION (Page 41)

A very efficient type and very similar in uses to the torsion † Due to its greater cost and efficiency, it should only be used to replace the torsion when it is necessary to handle a greater number of ventilators from one central station † It lends itself much better to motor drive, and in such cases should always be specified †

Sometimes it is used on short runs of continuous sash, but should never be specified in place of the tension type for longer runs of top hung †

#### SCREW (Page 43)

This type is highly efficient and finds its particular use in designs where there are a number of rows

of sash one above the other and with a comparatively small number of ventilators in each run † It is admirably adopted to prison sash and sometimes is called the prison type operator † Another popular use is in the high windows so often found in power houses † It is not particularly well adapted to controlling long runs, but rather many short runs †

#### TENSION (Page 45)

In the great majority of cases this type is the only one which will satisfactorily operate top hung sash and is never used for any other purpose † It is very efficient for this use inasmuch as its design is such as to increase the torque in greater proportion to the load, making an unusually easy control for long, heavy runs of top hung sash †

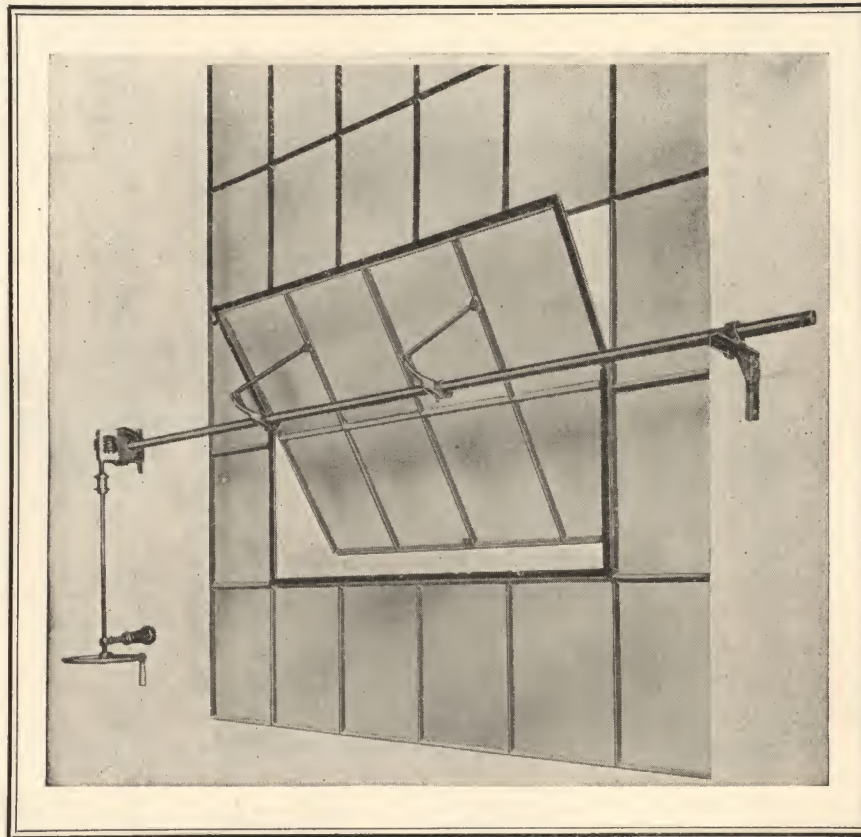
#### INFORMATION REQUIRED

Two copies of a drawing should be furnished showing the following:

- 1 † Length of line to be operated †
- 2 † Number of ventilators in each run †
- 3 † Size of ventilators †
- 4 † Location of pivots or hinges †
- 5 † Distance from inside of window to inside face of wall †
- 6 † Distance from inside face of wall to inside face of pilaster †
- 7 † If steel construction, distance from inside of window to face of truss †
- 8 † Size of truss members †
- 9 † What type of powers are required? Chain or shaft †
- 10 † Are chain idlers required or can chain hang straight from power?
- 11 † Give length of operating chain or vertical shaft †
- 12 † Billing address †
- 13 † Consignee and shipping address †
- 14 † Routing †
- 15 † If tension type operator is required, forward complete details of job †



## TORSION TYPE OPERATORS



† † †

† † †

### SPECIFICATIONS

**GENERAL**—All pivoted window openings where specifically shown on drawings as mechanically operated shall be controlled by Mesker's torsion operators as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**POWERS**—Powers shall be operated by galvanized endless-chain control within easy reach of the floor, and shall consist of cut cast gears and cut steel worms mounted in suitable open frames and provided with special brackets for attaching to building †

**SHAFTING**—Horizontal shafting shall be wrought pipe supported on adjustable angle iron brackets attached to the building or mullions † Pipe shall be connected in convenient lengths by rigid couplings, making a solid construction †

**LEVER ARMS**—Ventilators shall be connected to horizontal shafting by means of specially designed connecting rods and lever arms securely fastened to the sash by means of sash plates and firmly locked on the shaft †

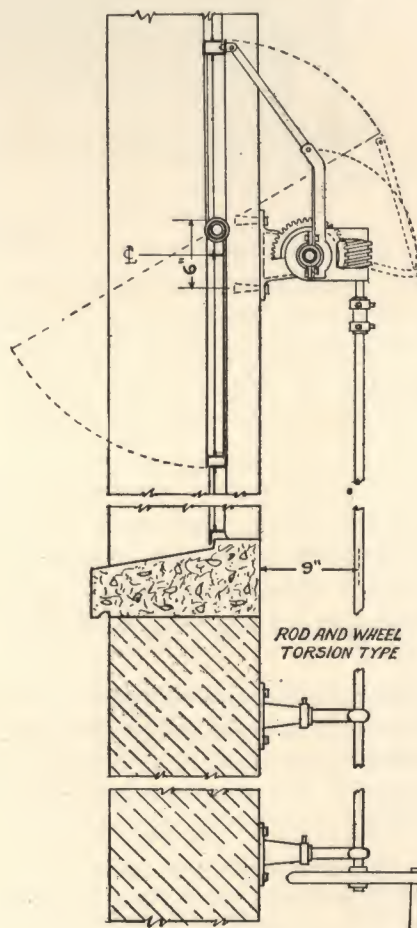
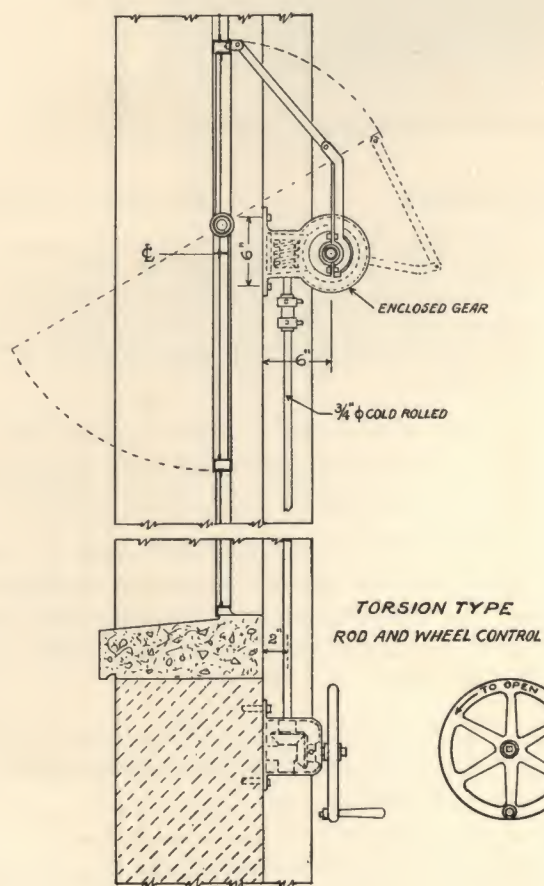
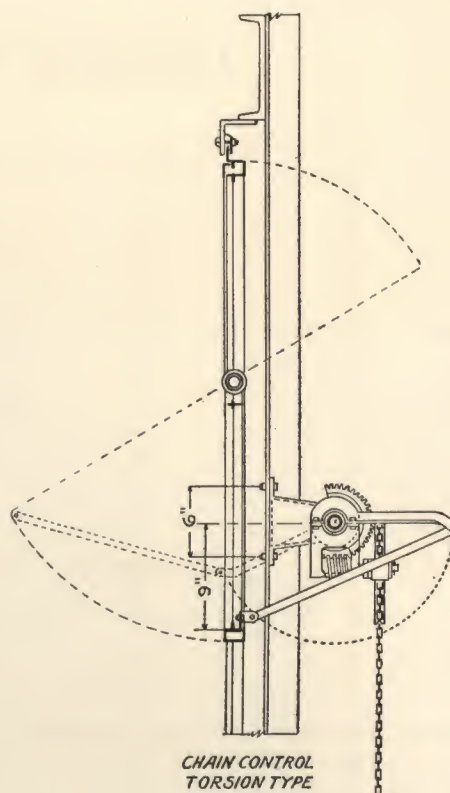
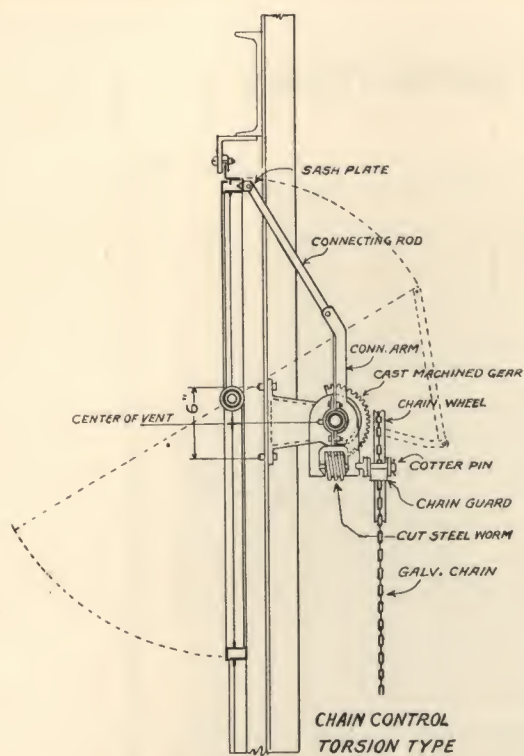
**PAINTING**—All exposed surfaces shall have a shop coat of rust-resisting mineral paint and a field coat after erection by the painting contractor †

**ERECTION**—All operators shall be erected by this contractor and left in perfect working order † All ventilators shall be thoroughly tried before attaching arms and shall not be glazed until completely assembled †

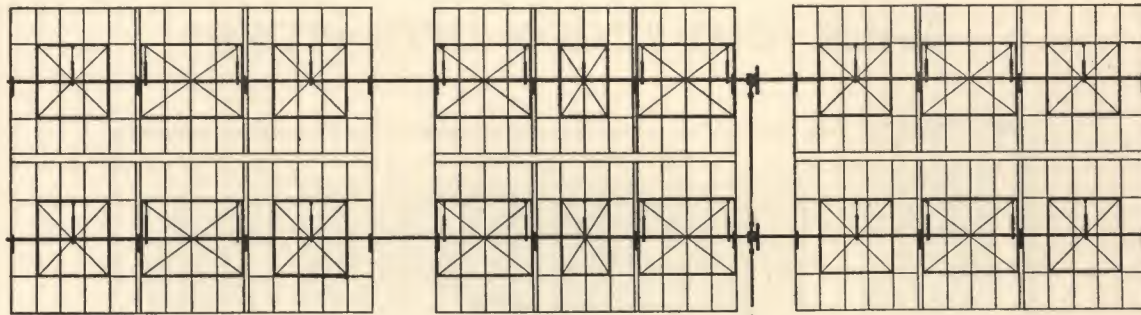
**SHOP DRAWINGS**—The manufacturer shall furnish detail drawings for approval before fabrication is begun †

- NOTES**—1 † All operator parts not castings or machine parts can be furnished from Genuine Wrought Iron †  
 2 † All parts may be hot dipped galvanized with the exception of the powers, which will then be painted aluminum †  
 3 † Shaft control by means of cold rolled shafting with either a vertical or horizontal hand-wheel may be substituted for chain operation †  
 4 † Enclosed powers working in oil may be substituted for open powers †

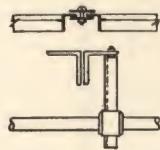


Scale— $\frac{3}{4}" = 1'$

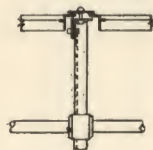




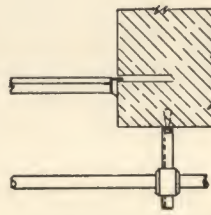
ELEVATION OF TYPICAL INSTALLATIONS



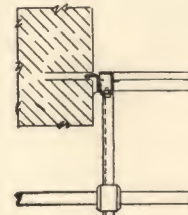
PLAN COL. CONNECTION



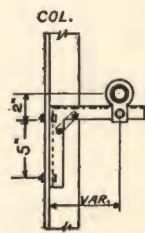
PLAN MULLION CONN.



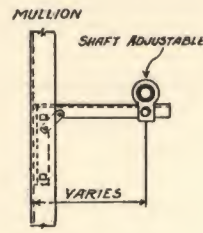
PLAN WALL CONNECTION



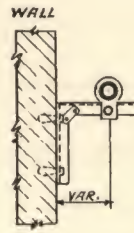
PLAN JAMB CONN.



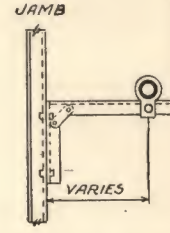
TO TRUSS COL.



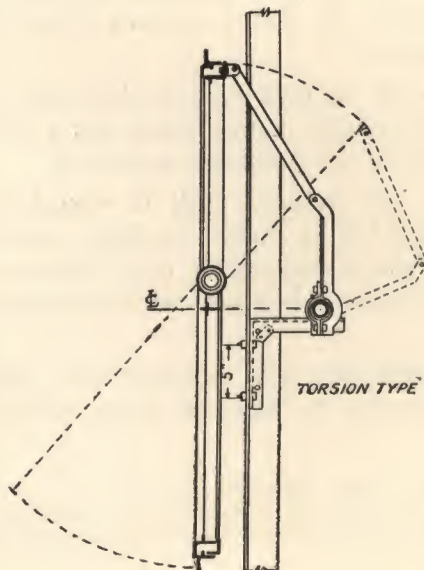
TO SASH MULLION



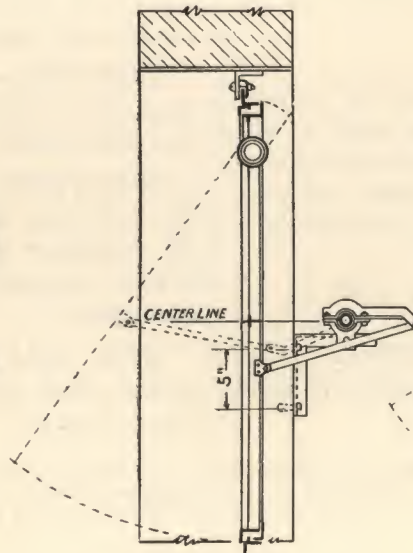
TO WALL



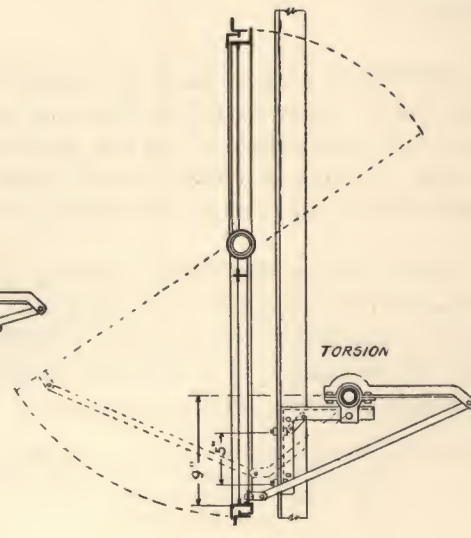
TO SASH JAMB



TORSION TYPE



CENTER LINE

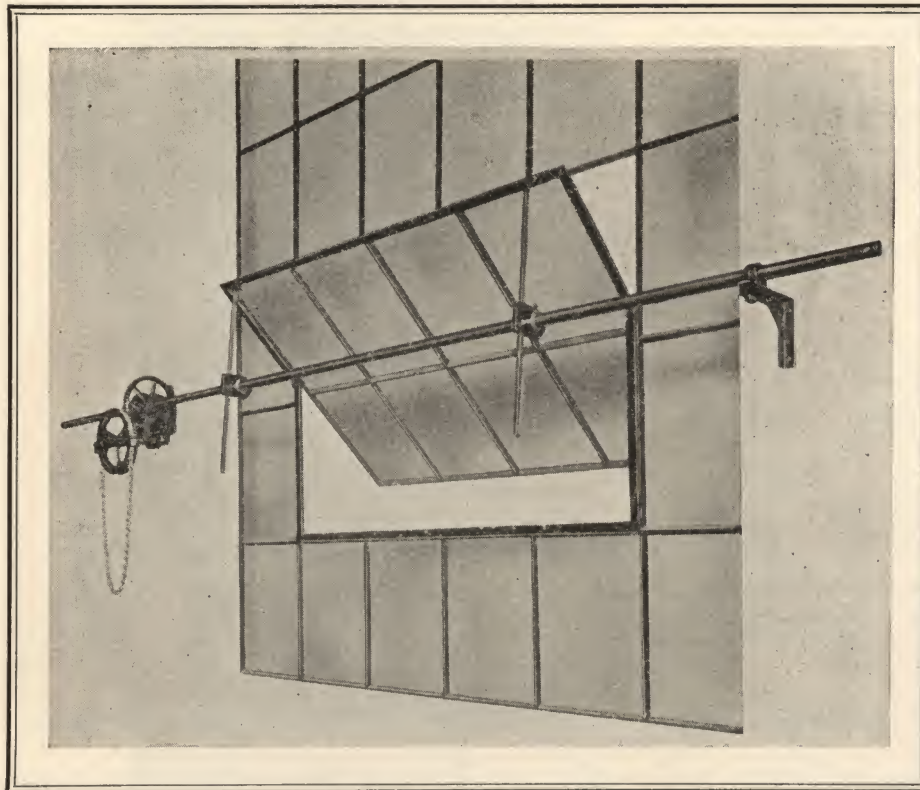


TORSION

Scale— $\frac{3}{4}$ " = 1'



## RACK AND PINION OPERATORS



### SPECIFICATIONS

**GENERAL**—All pivoted or continuous window openings where specifically shown on drawings as mechanically operated shall be controlled by Mesker's rack and pinion operators as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**POWERS**—Powers shall be operated by galvanized endless chain control within easy reach of the floor, and shall consist of cut cast gears and cut steel worms mounted in suitable open frames and provided with special brackets for attaching to building †

**SHAFTING**—Horizontal shafting shall be 1" wrought pipe supported on adjustable angle iron brackets attached to the building or mullions † Pipe shall be connected in convenient lengths by rigid couplings making a solid construction †

**LEVER ARMS**—Ventilators shall be connected to horizontal shafting by means of specially designed racks of cold rolled steel with machine cut teeth securely fastened to the sash by means of sash plates and firmly locked on the shaft by means of special machine cut pinions †

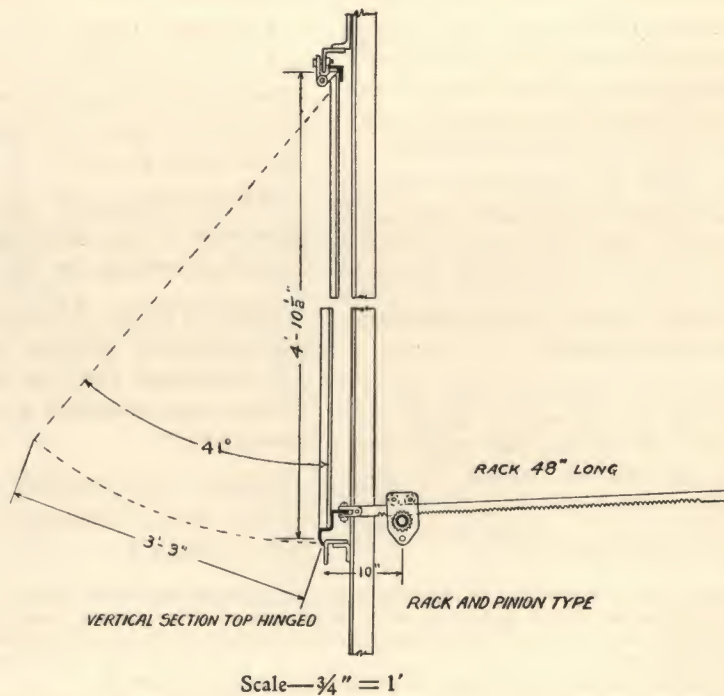
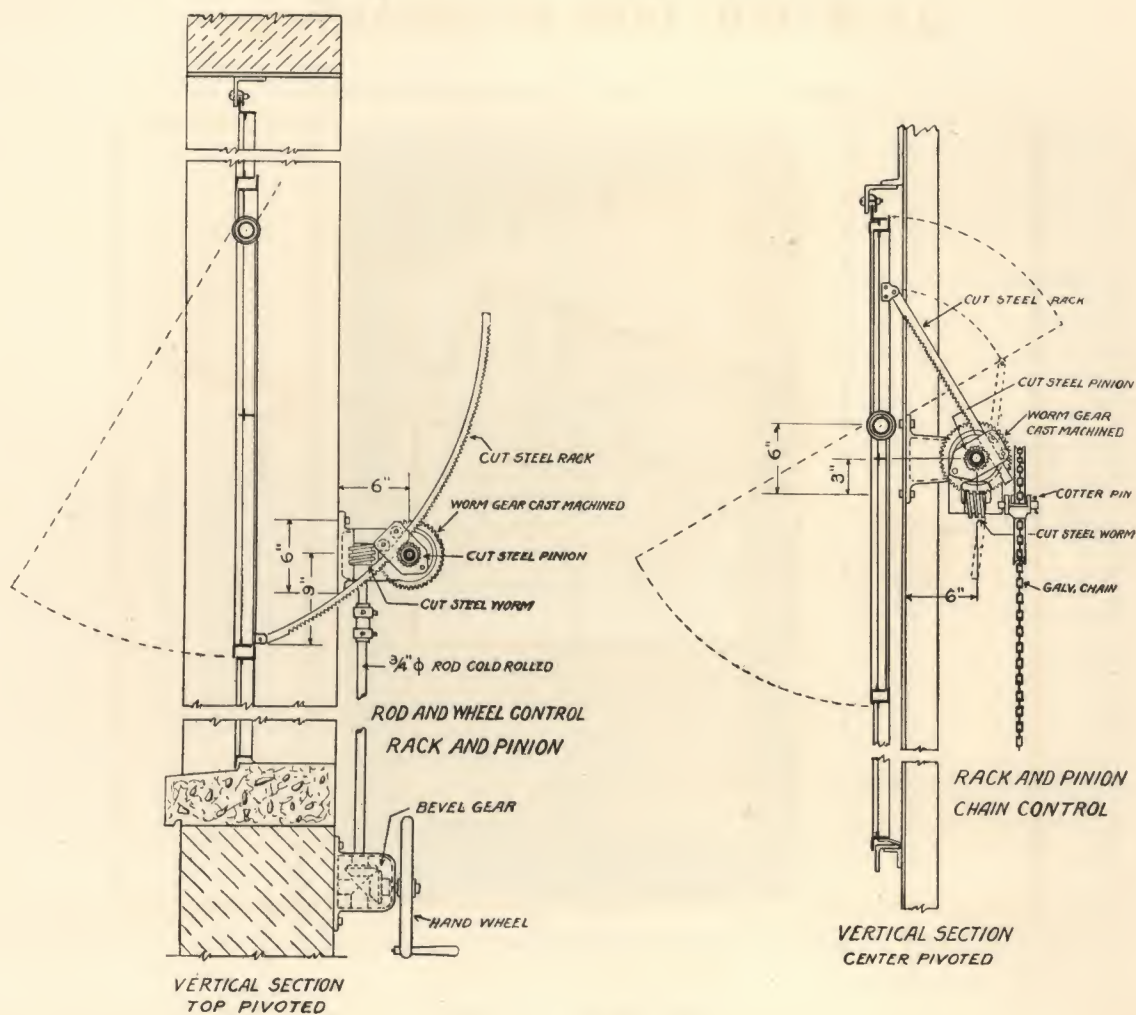
**PAINTING**—All exposed surfaces shall have a shop coat of rust-resisting mineral paint and a field coat after erection by the painting contractor †

**ERECTION**—All operators shall be erected by this contractor and left in perfect working order † All ventilators shall be thoroughly tried before attaching arms and shall not be glazed until completely assembled †

**SHOP DRAWINGS**—The manufacturer shall furnish detail drawings for approval before fabrication is begun †

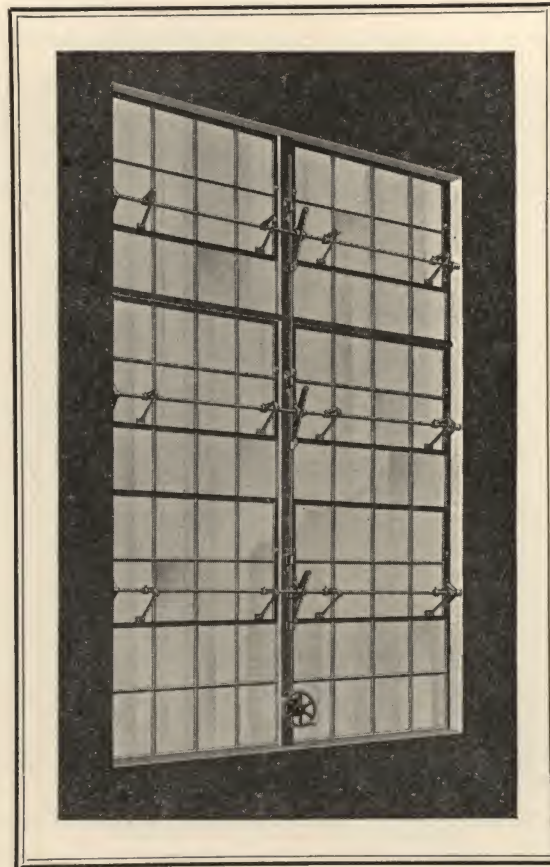
- NOTES**—1 † All operator parts not castings or machine parts can be furnished from Genuine Wrought Iron †  
 2 † All parts may be hot dipped galvanized with the exception of the powers, which will then be painted aluminum †  
 3 † Shaft control by means of cold rolled shafting with either a vertical or horizontal hand-wheel may be substituted for chain operation †  
 4 † Enclosed powers working in oil may be substituted for open powers †  
 5 † All punching of structural steel and necessary supports shall be done by the steel contractor †  
 6 † Power control may be had if so specified (see details of motor driven control) †







## SCREW TYPE OPERATOR



† † †

† † †

### SPECIFICATIONS

**GENERAL**—All pivoted window openings where specifically shown on drawings as mechanically operated shall be controlled by Mesker's screw type operators as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**POWERS**—Powers shall be operated by vertical hand-wheel within easy reach of the floor, and shall consist of phosphor bronze cast bevel gears mounted in suitable frames and provided with special brackets for attaching to building and cut steel screw † Cold rolled vertical shafting shall transmit the power from the screw to the horizontal shafts †

**SHAFTING**—Horizontal shafting shall be 1" wrought pipe supported on adjustable angle iron brackets attached to the building or mullions † Pipe shall be connected in convenient lengths by rigid couplings, making a solid construction † It shall be operated from the vertical shaft by means of specially designed lever arms and connecting rods †

**LEVER ARMS**—Ventilators shall be connected to horizontal shafting by means of specially designed connecting rods and lever arms securely fastened to the sash by means of sash plates and firmly locked on the shaft †

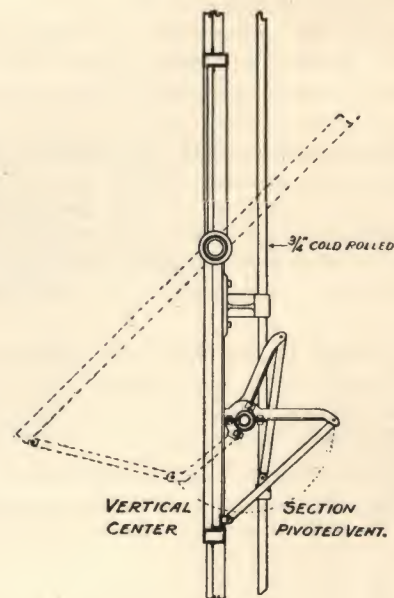
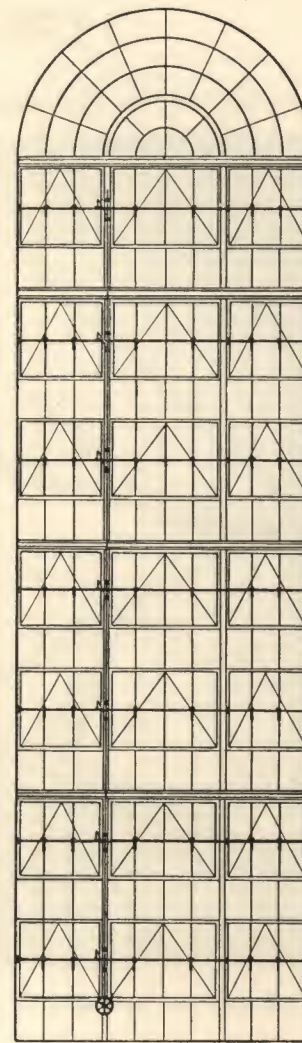
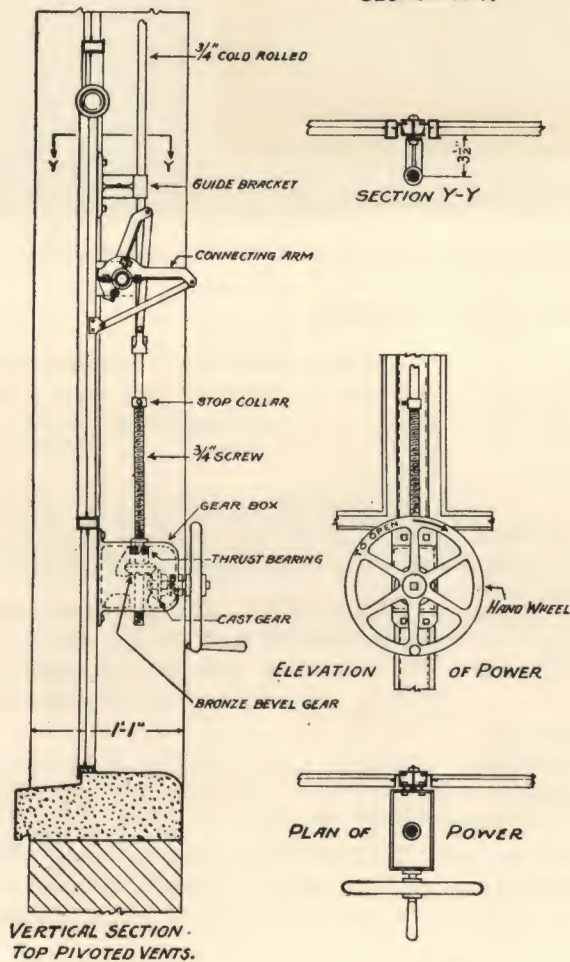
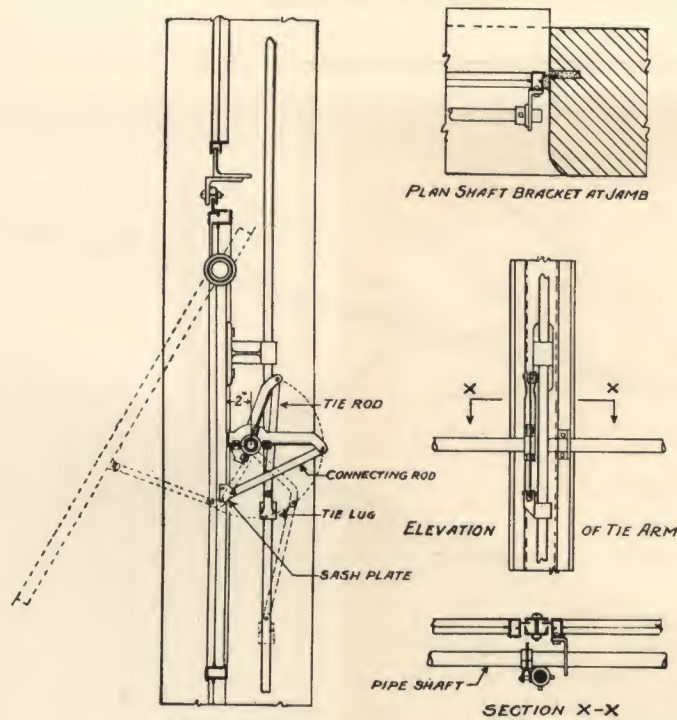
**PAINTING**—All exposed surfaces shall have a shop coat of rust-resisting mineral paint and a field coat after erection by the painting contractor †

**ERECTION**—All operators shall be erected by this contractor and left in perfect working order † All ventilators shall be thoroughly tried before attaching arms and shall not be glazed until completely assembled †

**SHOP DRAWINGS**—The manufacturer shall furnish detail drawings for approval before fabrication is begun †

- NOTES**—1 † All operator parts not castings or machine parts can be furnished from Genuine Wrought Iron †  
 2 † All parts may be hot dipped galvanized with the exception of the powers, which will then be painted aluminum †  
 3 † Shaft control by means of cold rolled shafting with either a vertical or horizontal hand-wheel may be substituted for chain operation †  
 4 † Enclosed powers working in oil may be substituted for open powers †  
 5 † All punching of structural steel and necessary supports shall be done by the steel contractor †  
 6 † Power control may be substituted for hand control (see specifications for motor driven units) †

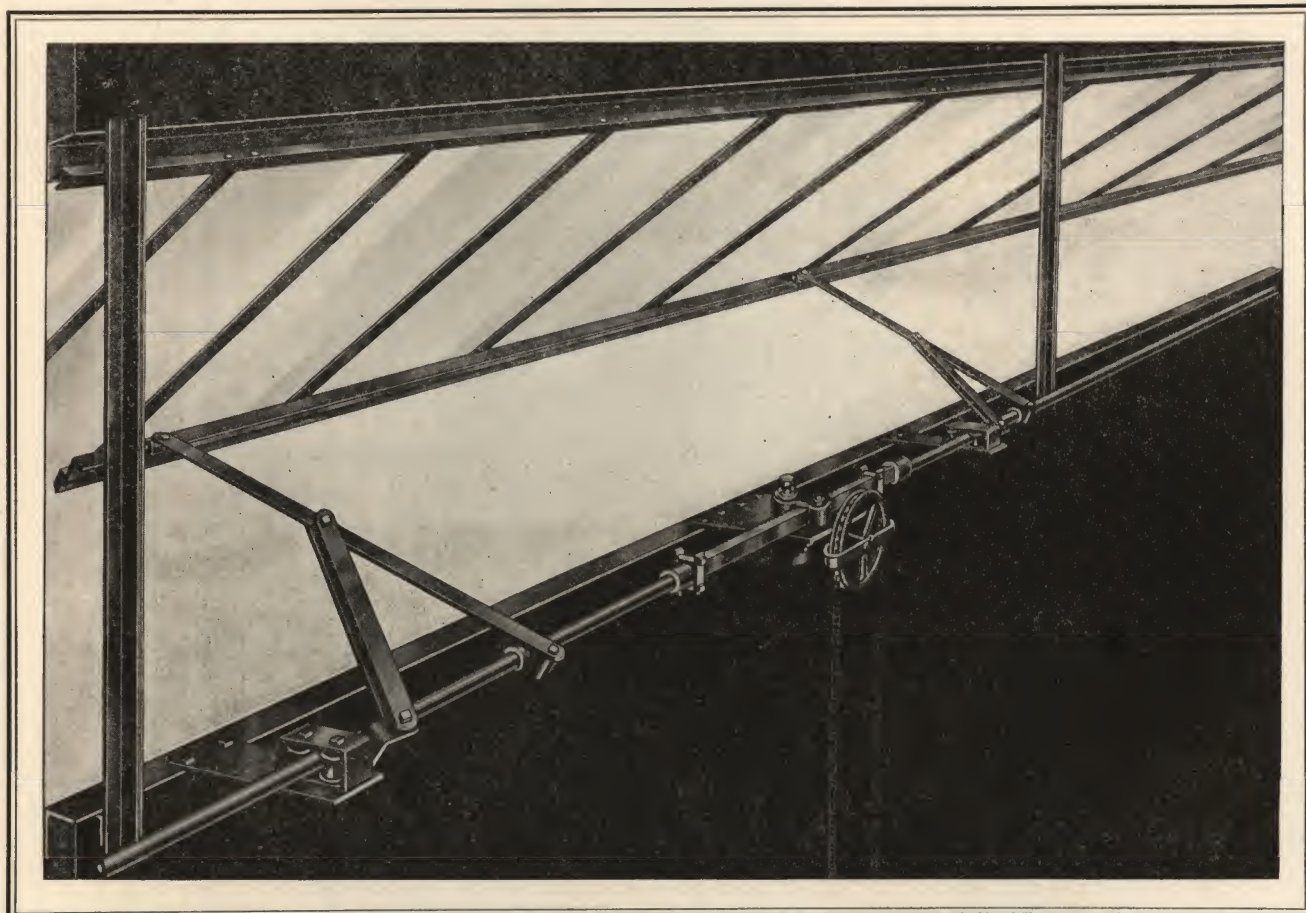




Scale— $\frac{3}{4}" = 1'$



## TENSION TYPE OPERATORS



## SPECIFICATIONS

**GENERAL**—All continuous window openings where specifically shown on drawings as mechanically operated shall be controlled by Mesker's tension operators as made by Mesker Bros. Iron Co., St. Louis, Mo., or equal approved by the architect †

**POWERS**—Powers shall be operated by galvanized endless-chain control within easy reach of the floor, and shall consist of cut cast gears and cut steel worms mounted in suitable fully enclosed dustproof frames and provided with special brackets for attaching to building † All parts to be running in oil †

**SHAFTING**—Power shall be transmitted through standard tension pipe line mounted on substantial roller brackets and connected to power through machine cut steel rack and pinion †

**LEVER ARMS**—Ventilators shall be connected to horizontal shafting by means of specially designed toggle arms securely hinged to the sash and firmly locked on the shaft † All bearings shall be bronze bushed †

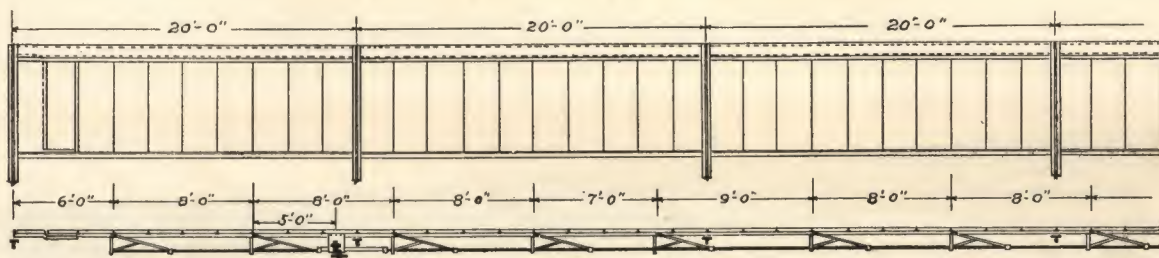
**PAINTING**—All exposed surfaces shall have a shop coat of rust-resisting mineral paint and a field coat after erection by the painting contractor †

**ERECTION**—All operators shall be erected by this contractor and left in perfect working order † All ventilators shall be thoroughly tried before attaching arms and shall not be glazed until completely assembled †

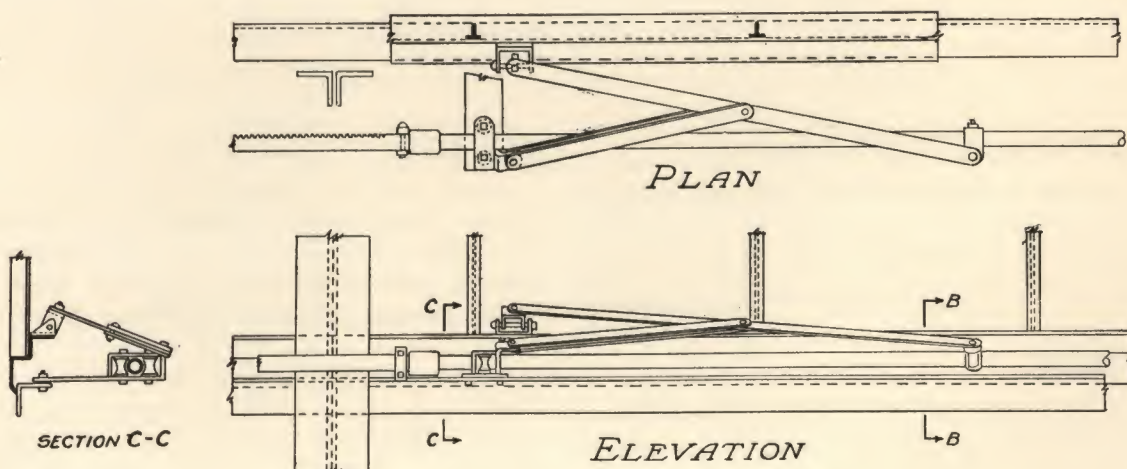
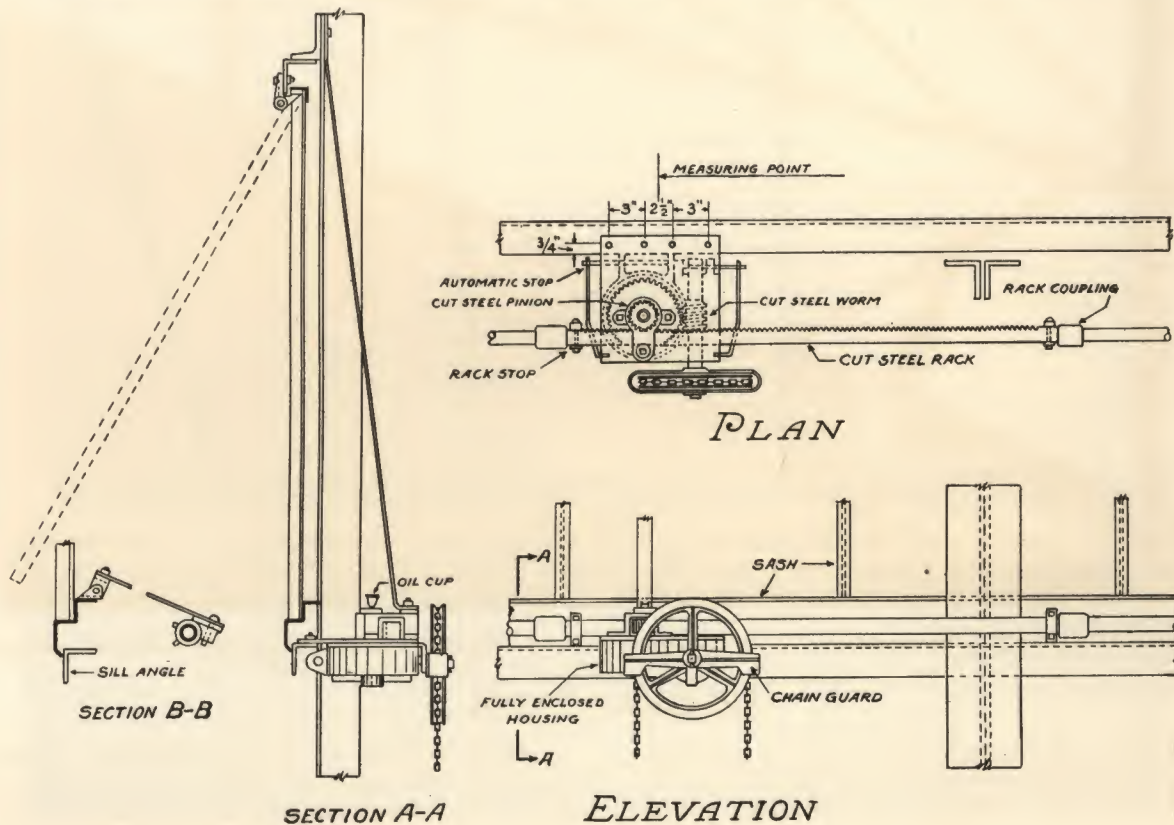
**SHOP DRAWINGS**—The manufacturer shall furnish detail drawings for approval before fabrication is begun †

- NOTES**—1 † All operator parts not castings or machine parts can be furnished from Genuine Wrought Iron †  
 2 † All parts may be hot dipped galvanized with the exception of the powers, which will then be painted aluminum †  
 3 † Shaft control by means of cold rolled shafting with either a vertical or horizontal hand-wheel may be substituted for chain operation †  
 4 † Enclosed powers working in oil may be substituted for open powers †  
 5 † All punching of structural steel and necessary supports shall be done by the steel contractor †  
 6 † Power control may be substituted for hand control (see specifications for motor driven units) †





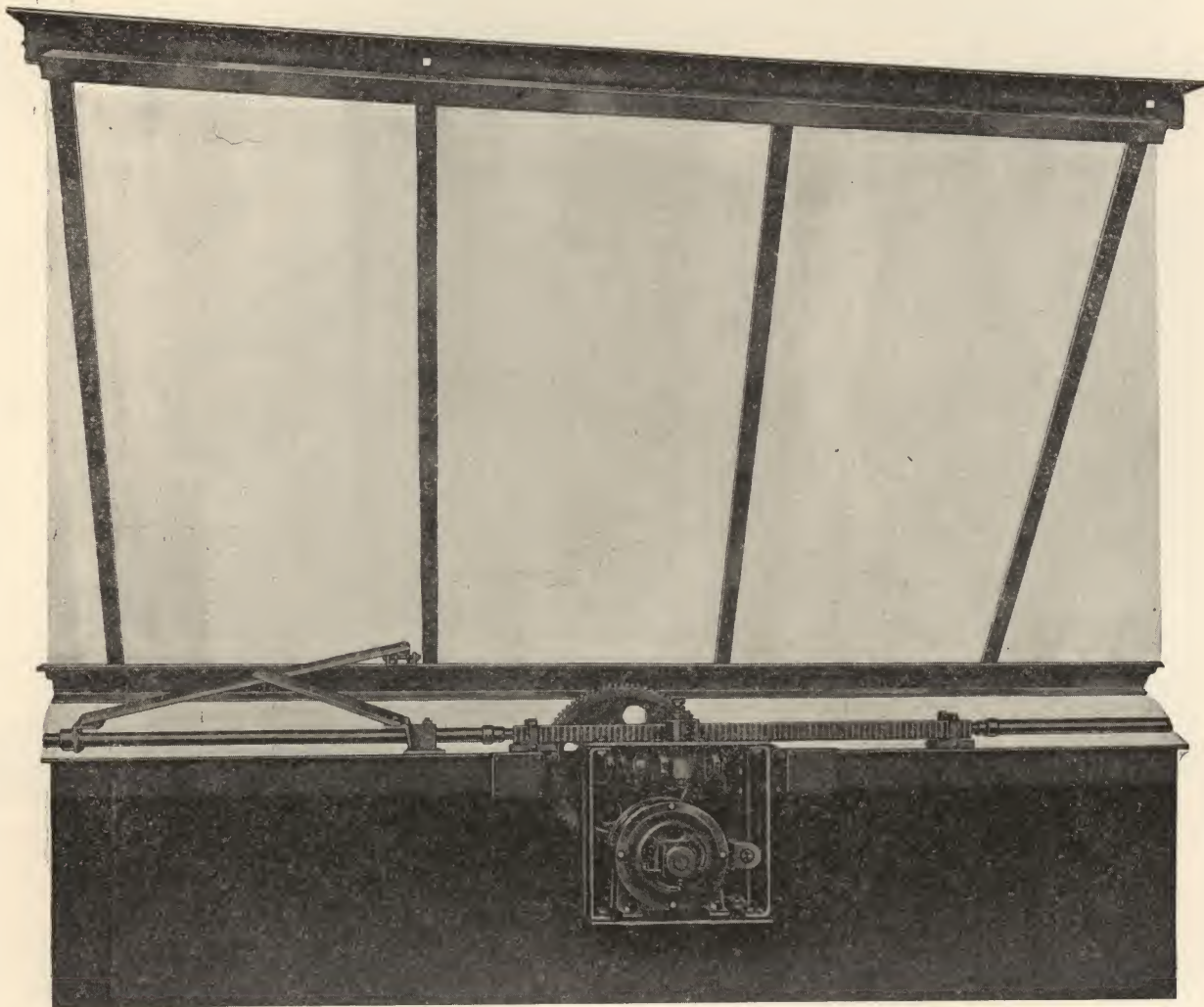
INTERIOR ELEVATION AND PLAN OF TYPICAL RUN TOP HINGED CONTINUOUS SASH VERTICAL AND OFF-VERTICAL



Scale— $\frac{3}{4}$ " = 1'



## MOTOR DRIVEN OPERATORS



*Where motor driven operators are required the following paragraphs should be inserted in the specifications covering the type of operator required †*

### ELECTRICAL FITTINGS

All necessary motors, limit switches, control panels and push button station shall be furnished by the operator manufacturer † All wiring conduits, etc., shall be furnished by the electrical contractor †

### ERECTION

*(Add this under erection paragraph):* Motors, limit switches and control panels shall be installed by the operator contractor, but all wiring shall be done by the electrical contractor †

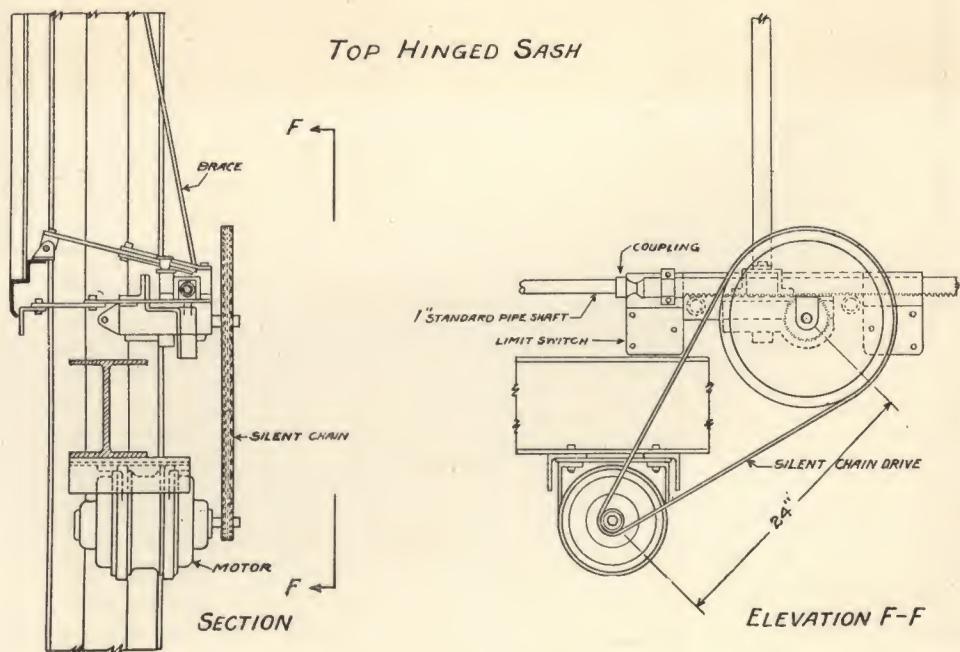
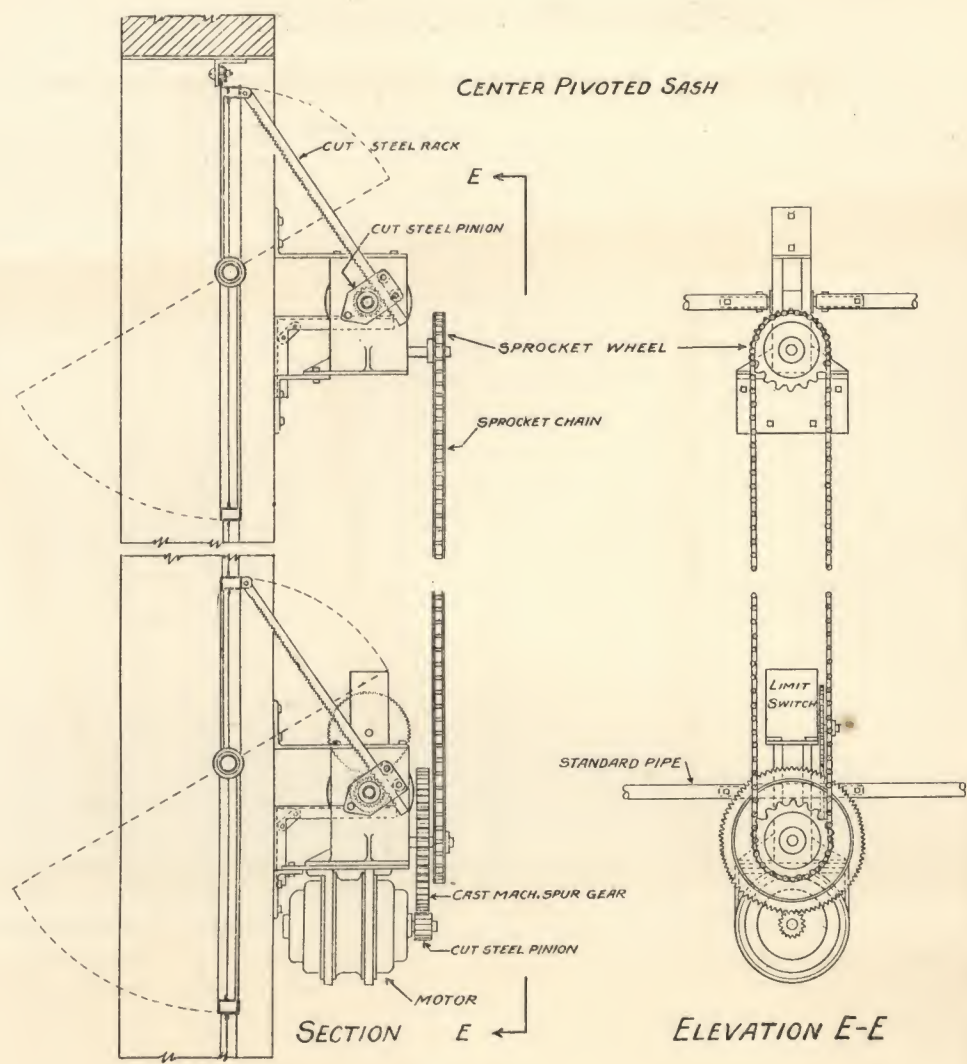
### MOTORS

Power shall be supplied by means of electric motors in an approved manner in accordance with the manufacturer's standard † The motors shall be enclosed and so designed to have a high starting torque for operation on multi-phase current †

### LIMIT SWITCHES

The operator manufacturer shall furnish suitable limit switches with each motor to automatically cut off the current when the windows have reached the open or closed position †





Scale— $\frac{3}{4}$ " = 1'

Wrought Iron Sash Originators



# OPERATOR CAPACITIES

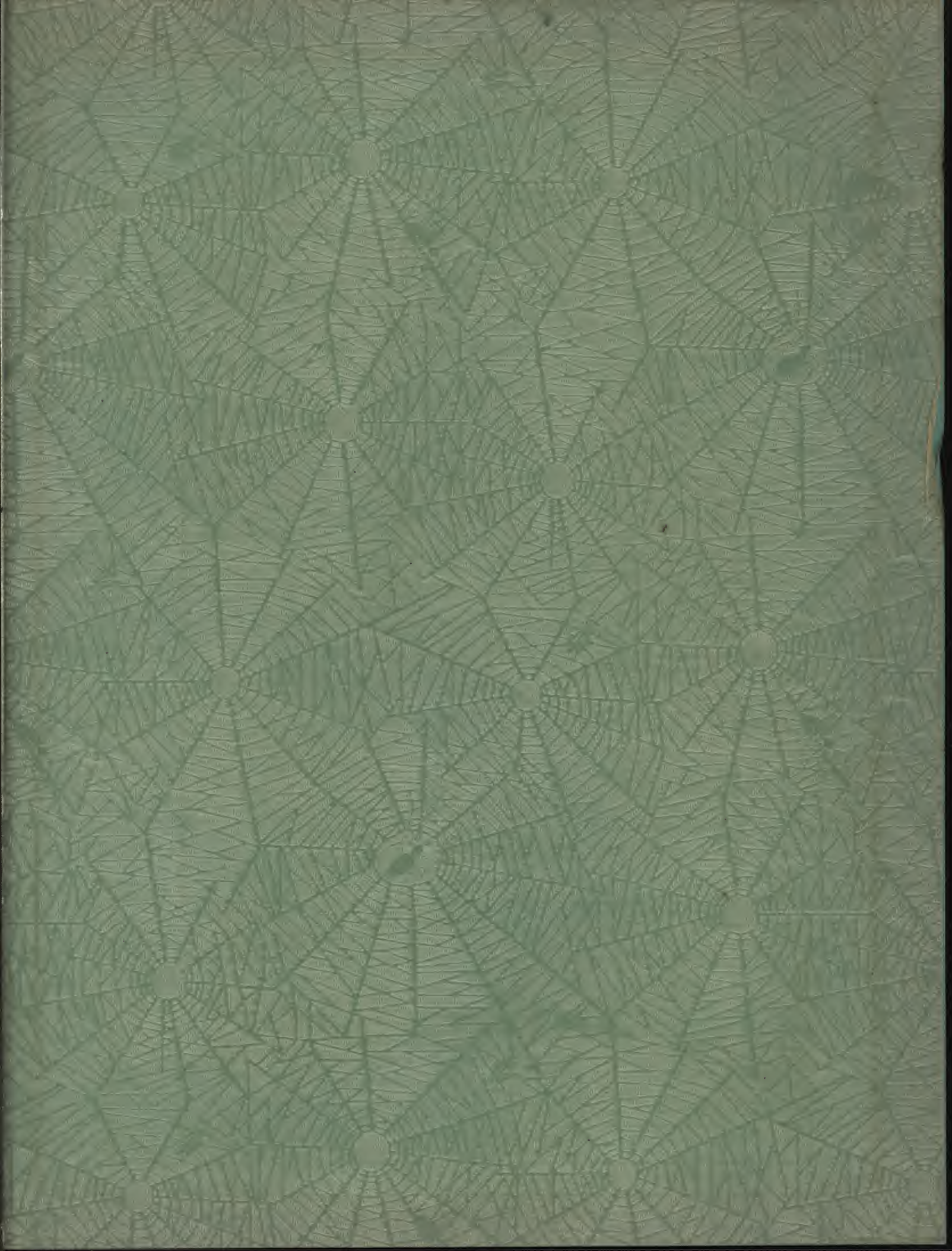
TORSION TYPE									
CENTER SIDE PIVOTED VENTILATORS					BOTTOM PIVOTED INSWINGING VENTILATORS				
POWER-STYLE	No. VENTS. 2LTS. WIDE	No. VENTS. 3LTS. WIDE	No. VENTS. 4LTS. WIDE	LENGTH RUN	POWER-STYLE	No. VENTS. 2LTS. WIDE	No. VENTS. 3LTS. WIDE	No. VENTS. 4LTS. WIDE	LENGTH RUN
No. 361-CHAIN & WHEEL	24	20	18	100'-0"	No. 361-CHAIN & WHEEL	22	18	16	100'-0"
No. 362-ROD & HOR. WHEEL	24	20	18	100'-0"	No. 362-ROD & HOR. "	22	18	16	100'-0"
No. 363-ROD & VERT. WHEEL	24	20	18	100'-0"	No. 363-ROD & VERT. "	22	18	16	100'-0"
TOP PIVOTED OUTSWINGING VENTILATORS					TOP PIVOTED INSWINGING VENTILATORS				
No. 361-CHAIN & WHEEL	20	16	14	100'-0"	No. 361-CHAIN & WHEEL	18	14	12	100'-0"
No. 362-ROD & HOR. WHEEL	20	16	14	100'-0"	No. 362-ROD & HOR. "	18	14	12	100'-0"
No. 363-ROD & VERT. WHEEL	20	16	14	100'-0"	No. 363-ROD & VERT. "	18	14	12	100'-0"

POWERS SHOULD NOT BE PLACED AT GREATER DISTANCE THAN 60'-0" FROM ENDS OF RUN.

RACK AND PINION TYPE						
POWER	TYPE OF VENTS.	SIZE VENTS. LTS. WI. LTS. HI.	No. VENTS.	LENGTH RUN	POWER TO END OF RUN	MANUAL
361-F	CENT. PIVOTED	2 x 2	30	140'-0"	70'-0"	CHAIN AND WHEEL
"	"	3 x 2	20	140'-0"	70'-0"	"
"	"	4 x 2	18	140'-0"	70'-0"	"
362-F	"	2 x 2	28	140'-0"	70'-0"	ROD AND HOR. WHEEL
"	"	3 x 2	22	140'-0"	70'-0"	"
"	"	4 x 2	20	140'-0"	70'-0"	"
363-F	"	2 x 2	28	140'-0"	70'-0"	ROD AND VERT. WHEEL
"	"	3 x 2	22	140'-0"	70'-0"	"
"	"	4 x 2	20	140'-0"	70'-0"	"
361-F	BOTTOM PIV.	2 x 2	30	130'-0"	65'-0"	CHAIN AND WHEEL
"	"	3 x 2	24	130'-0"	65'-0"	"
"	"	4 x 2	18	130'-0"	65'-0"	"
362-F	"	2 x 2	28	110'-0"	55'-0"	ROD AND HOR. WHEEL
"	"	3 x 2	22	110'-0"	55'-0"	"
"	"	4 x 2	20	110'-0"	55'-0"	"
363-F	"	2 x 2	28	110'-0"	55'-0"	ROD AND VERT. WHEEL
"	"	3 x 2	22	110'-0"	55'-0"	"
"	"	4 x 2	20	110'-0"	55'-0"	"
361-F	TOP PIVOTED	2 x 2	28	80'-0"	40'-0"	CHAIN AND WHEEL
"	"	3 x 2	22	80'-0"	40'-0"	"
"	"	4 x 2	16	80'-0"	40'-0"	"
362-F	"	2 x 2	26	80'-0"	40'-0"	ROD AND HOR. WHEEL
"	"	3 x 2	20	80'-0"	40'-0"	"
"	"	4 x 2	18	80'-0"	40'-0"	"
363-F	"	2 x 2	26	80'-0"	40'-0"	ROD AND VERT. WHEEL
"	"	3 x 2	20	80'-0"	40'-0"	"
"	"	4 x 2	18	80'-0"	40'-0"	"
10 M-A	CENT. PIVOTED	2 x 2	80	350'-0"	175'-0"	MOTOR
"	"	3 x 2	70	350'-0"	175'-0"	"
"	"	4 x 2	60	350'-0"	175'-0"	"
"	BOTTOM PIV.	2 x 2	60	300'-0"	150'-0"	"
"	"	3 x 2	50	300'-0"	150'-0"	"
"	"	4 x 2	40	300'-0"	150'-0"	"
"	TOP PIVOTED	2 x 2	50	250'-0"	125'-0"	"
"	"	3 x 2	40	250'-0"	125'-0"	"
"	"	4 x 2	30	250'-0"	125'-0"	"

SCREW TYPE				TENSION TYPE				
POWER	No. VENTS.	LENGTH RUN	CONTROL	POWER	TYPE VENTS.	No. VENTS.	LENGTH RUN	SASH HEIGHT
No. 12	40	300'-0"	MANUAL	9 H	CENT. PIV.	44	200'-0"	
No. 11	20	150'-0"	"	"	TOP PIV.	40	200'-0"	
No. 12	60	350'-0"	MOTOR	"	BOT. PIV.	40	200'-0"	
THE ABOVE SHOWN CAPACITIES OF SCREW TYPE SASH OPERATORS IS TOTAL LINEAL FOOTAGE, - WHEN DIVIDED INTO A SERIES OF COMBIN- ED RUNS SUCH AS OCCUR IN LARGE WINDOW OPENINGS WITH A NUMBER OF RUNS OF VENTILATORS IN SHORT RUNS OCCURRING ONE ABOVE THE OTHER.				"	CONTINUOUS VERTICAL		220'-0"	3'-0"
				"	"	"	180'-0"	4'-0"
				"	"	"	160'-0"	5'-0"
				"	"	"	145'-0"	6'-0"
				"	"	30% OFF VERT.	120'-0"	3'-0"
				"	"	"	90'-0"	4'-0"
				"	"	"	80'-0"	5'-0"
				"	"	"	75'-0"	6'-0"
				ADD 50% PER CENT TO RUNS AND VENTILATORS FOR MOTOR CONTROL.				







# OPERATOR CAPACITIES

TORSION TYPE									
CENTER SIDE PIVOTED VENTILATORS					BOTTOM PIVOTED INSWINGING VENTILATORS				
POWER-STYLE	NO. VENTS. 2 LTS. WIDE	NO. VENTS. 3 LTS. WIDE	NO. VENTS. 4 LTS. WIDE	LENGTH RUN	POWER-STYLE	NO. VENTS. 2 LTS. WIDE	NO. VENTS. 3 LTS. WIDE	NO. VENTS. 4 LTS. WIDE	LENGTH RUN
No. 361-CHAIN & WHEEL	24	20	18	100'-0"	No. 361-CHAIN & WHEEL	22	18	16	100'-0"
No. 362-ROD & HOR. WHEEL	24	20	18	100'-0"	No. 362-ROD & HOR. WHEEL	22	18	16	100'-0"
No. 363-ROD & VERT. WHEEL	24	20	18	100'-0"	No. 363-ROD & VERT. WHEEL	22	18	16	100'-0"
TOP PIVOTED OUTSWINGING VENTILATORS					TOP PIVOTED INSWINGING VENTILATORS				
No. 361-CHAIN & WHEEL	20	16	14	100'-0"	No. 361-CHAIN & WHEEL	18	14	12	100'-0"
No. 362-ROD & HOR. WHEEL	20	16	14	100'-0"	No. 362-ROD & HOR. WHEEL	18	14	12	100'-0"
No. 363-ROD & VERT. WHEEL	20	16	14	100'-0"	No. 363-ROD & VERT. WHEEL	18	14	12	100'-0"

POWERS SHOULD NOT BE PLACED AT GREATER DISTANCE THAN 60'-0" FROM ENDS OF RUN.

RACK AND PINION TYPE							
POWER	TYPE OF VENTS.	SIZE VENTS. LTS. W. LTS. H.	NO. VENTS.	LENGTH RUN	POWER TO END OF RUN	MANUAL	
361-F	CENT. PIVOTED	2 X 2	30	140'-0"	75'-0"	CHAIN AND WHEEL	
"	"	3 X 2	20	140'-0"	75'-0"	" "	
"	"	4 X 2	18	140'-0"	75'-0"	" "	
362-F	"	2 X 2	28	140'-0"	75'-0"	ROD AND HOR. WHEEL	
"	"	3 X 2	22	140'-0"	75'-0"	" "	
"	"	4 X 2	20	140'-0"	75'-0"	" "	
363-F	"	2 X 2	28	140'-0"	75'-0"	ROD AND VERT. WHEEL	
"	"	3 X 2	22	140'-0"	75'-0"	" "	
"	"	4 X 2	20	140'-0"	75'-0"	" "	
361-F	BOTTOM PIV.	2 X 2	30	130'-0"	65'-0"	CHAIN AND WHEEL	
"	"	3 X 2	24	130'-0"	65'-0"	" "	
"	"	4 X 2	18	130'-0"	65'-0"	" "	
362-F	"	2 X 2	28	110'-0"	55'-0"	ROD AND HOR. WHEEL	
"	"	3 X 2	22	110'-0"	55'-0"	" "	
"	"	4 X 2	20	110'-0"	55'-0"	" "	
363-F	"	2 X 2	28	110'-0"	55'-0"	ROD AND VERT. WHEEL	
"	"	3 X 2	22	110'-0"	55'-0"	" "	
"	"	4 X 2	20	110'-0"	55'-0"	" "	
361-F	TOP PIVOTED	2 X 2	28	80'-0"	40'-0"	CHAIN AND WHEEL	
"	"	3 X 2	22	80'-0"	40'-0"	" "	
"	"	4 X 2	16	80'-0"	40'-0"	" "	
362-F	"	2 X 2	26	80'-0"	40'-0"	ROD AND HOR. WHEEL	
"	"	3 X 2	20	80'-0"	40'-0"	" "	
"	"	4 X 2	18	80'-0"	40'-0"	" "	
363-F	"	2 X 2	26	80'-0"	40'-0"	ROD AND VERT. WHEEL	
"	"	3 X 2	20	80'-0"	40'-0"	" "	
"	"	4 X 2	18	80'-0"	40'-0"	" "	
10 M-A	CENT. PIVOTED	2 X 2	90	350'-0"	175'-0"	MOTOR	
"	"	3 X 2	70	350'-0"	175'-0"	" "	
"	"	4 X 2	60	350'-0"	175'-0"	" "	
"	BOTTOM PIV.	2 X 2	60	300'-0"	150'-0"	" "	
"	"	3 X 2	50	300'-0"	150'-0"	" "	
"	"	4 X 2	40	300'-0"	150'-0"	" "	
"	TOP PIVOTED	2 X 2	50	250'-0"	125'-0"	" "	
"	"	3 X 2	40	250'-0"	125'-0"	" "	
"	"	4 X 2	30	250'-0"	125'-0"	" "	

SCREW TYPE				TENSION TYPE				
POWER	NO. VENTS.	LENGTH RUN	CONTROL	POWER	TYPE VENTS.	NO. VENTS.	LENGTH RUN	SASH HEIGHT
No. 12	40	300'-0"	MANUAL	9 H	CENT. PIV.	44	200'-0"	
No. 11	20	150'-0"	"	"	TOP PIV.	40	200'-0"	
No. 13	60	350'-0"	MOTOR	"	BOT. PIV.	40	200'-0"	
THE ABOVE SHOWN CAPACITIES OF SCREW TYPE SASH OPERATORS IS TOTAL LINEAL FOOTAGE, WHEN DIVIDED INTO A SERIES OF COMBIN- ED RUNS SUCH AS OCCUR IN LARGE WINDOW OPENINGS WITH A NUMBER OF RUNS OF VENTILATORS IN SHORT RUNS OCCURRING ONE ABOVE THE OTHER.				"	CONTINUOUS VERTICAL		220'-0"	3'-0"
				"	"	"	180'-0"	4'-0"
				"	"	"	160'-0"	5'-0"
				"	"	"	145'-0"	6'-0"
				"	"	30% OFF VERT.	120'-0"	3'-0"
				"	"	"	90'-0"	4'-0"
				"	"	"	80'-0"	5'-0"
				"	"	"	75'-0"	6'-0"
ADD 50% PER CENT TO RUNS AND VENTILATORS FOR MOTOR CONTROL.								







